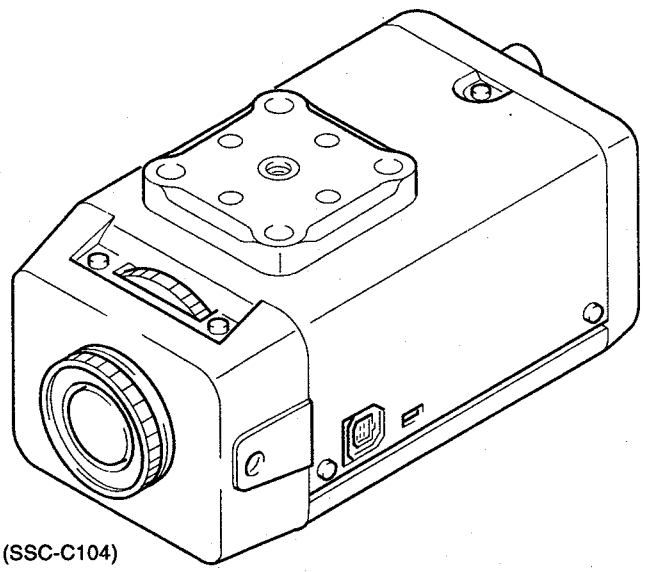
SONY

CCD COLOR VIDEO CAMERA

# SSC-C104
# SSC-C108P

## SERVICE MANUAL



(SSC-C104)

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**(SSC-C108P only)**

**Hinweis zum Netzstecker**

**(bei der Verwendung in der Bundesrepublik)**

In der Bundesrepublik verwenden Sie den von der Gebrüder Broghammer GmbH & Co. hergestellten Netzstecker (mit VDE-Genehmigung, DIN 49 441 Typ Nr. 636).

**Zum sicheren Anschluß**

(1) Schneiden Sie den verlöteten Teil der abisolierten Enden des Netzkabels ab, stecken Sie die unverlöteten Teile in die Löcher, und drehen Sie die Schrauben zu.
(Stecken Sie nicht die verlöteten Teile ein, da es sonst zu Wackelkontakten kommen kann.)

(2) Stellen Sie sicher, daß der Erdungsdraht (Grün-Gelb) des Netzkabels am Erdungskont-akt angeschlossen ist.

(3) Vergewissern Sie sich nach der Befestigung noch einmal, daß sich die Drähte nicht berühren.

(4) Nach allen Anschlüssen setzen Sie das Netzkabel fest in den Stecker ein, um übermäßigen Druck auf jeden Anschlußpunkt zu vermeiden.

(5) Als letztes bauen Sie den Netzstecker richtig wieder zusammen.

**SAFETY RELATED COMPONENT WARNING**

Components identified by shading and ⚠ marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or supplements published by SONY.

**This section is extracted from instruction manual.**

# SECTION 1 GENERAL

## NOTICE FOR THE SSC-C104

The graphical symbols are on the unit SSC-C104.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

### For the customers in the USA (SSC-C104 only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

### For the customers in the United Kingdom (SSC-C108P only)

**WARNING**
**THIS APPARATUS MUST BE EARTHED**

**IMPORTANT**

The wires in this mains lead are coloured in accordance with the following code:

| | |
|---|---|
| Green-and-yellow: | Earth |
| Blue: | Neutral |
| Brown: | Live |

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

This manual applies to both the SSC-C104 and SSC-C108P. The operating instructions apply to both cameras, but their signal systems and power requirements are different.

| | Signal system | Power requirements |
|---|---|---|
| SSC-C104 | NTSC color system | 24V AC, 60 Hz |
| SSC-C108P | PAL color system | 220-240V AC, 50 Hz |

## Features

- **High sensitivity**
- **Backlight compensation**
- **Turbo AGC**
- **CCD-IRIS function**
- **Compact and lightweight**
- **Line lock function**
- **C/CS mount capability**
- **DC/VS servo Auto-iris lens capability**
- **Automatic Tracing White Balance**

## Notes on Use

### Power supply

- The SSC-C104 must always be operated with a 24V AC, 60 Hz Class 2 power supply.
  In the U.S.A, use a power supply which is UL Listed. In Canada, use a power supply which is CSA Certified.
  - When connecting the transformer, be sure to connect each lead to the appropriate terminal. Wrong connection may cause malfunction and/or damage to the video camera.
  - Ground the unit or an irregular voltage may be generated in the AC power cord and may cause malfunction and/or damage to the video camera.
- The SSC-C108P must always be operated with a 220-240V AC, 50 Hz.

### Handling of the unit

Be careful not to spill water or other liquids on the unit, or allow combustible or metallic materials inside the body. If used with foreign matter inside, the camera may fail, or be a cause of fire or electric shock.

### Operating and storage locations

Avoid shooting very bright objects (such as light fittings) for an extended period. Avoid operating or storing the unit in the following locations:

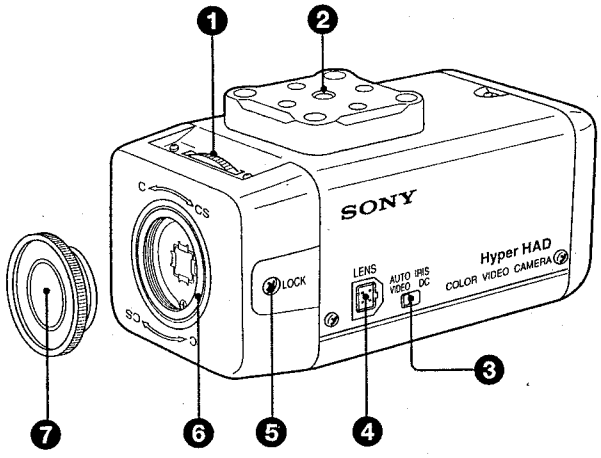
- Extremely hot or cold places (operating temperature –10°C to 50°C (14°F to 122°F), storage temperature –40°C to 60°C (–40°F to 140°F)
- Damp or dusty places
- Where it is exposed to rain
- Locations subject to strong vibration
- Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.

### Care of the unit

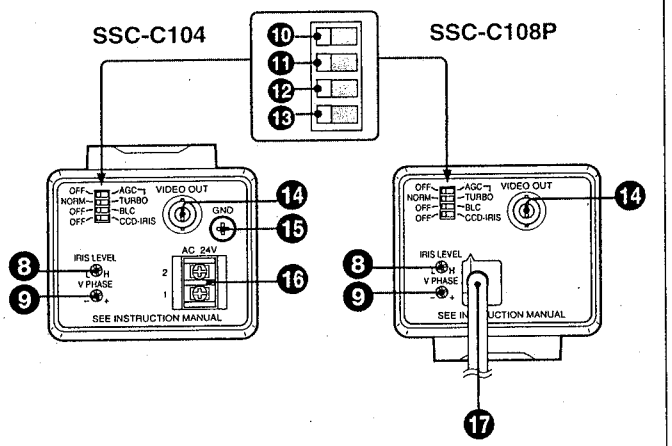
- Use a blower to remove dust or dirt on the surface of the lens or optical filter.
- Clean the body with a dry soft cloth. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent, then wipe dry. Avoid the use of volatile solvents such as thinners, alcohol, benzene, and insecticides. They may damage the surface finish, or impair the operation of the camera.

In the event of any problems with the operation of the camera, contact your authorized Sony dealer.

A




B

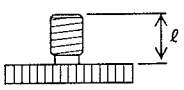



## Location and Function of Parts

### Front and side — Illustration A

**❶ C/CS adjustment ring**
The C/CS ring to adjusts the back focus to suit the type of lens fitted (C-mount or CS-mount). The factory setting is set to C-mount. After adjusting, be sure to lock the back focus with the ❺ LOCK screw.

**❷ Camera mounting plate (C104-Top/C108P-Bottom)**
The camera mounting plate can be attached to either the top or bottom of the camera using the 4 attached screws. Use the mounting plate screw hole to fix the camera to a mounting bracket. The mounting screw must be of the following type.
1/4" UNC (20 pitch)
ℓ: 4.5 mm ± 0.2 mm (ISO standard), or 0.197" (ASA standard)




**❸ AUTO IRIS select switch**
Switch to VIDEO when using a VS-servo lens.
Switch to DC when using a DC-servo lens.

**❹ LENS connector (4-pin)**
When using an auto iris lens, plug the lens plug into this socket. The lens cable plug will have to be replaced with the plug supplied before insertion.

**❺ Back focus LOCK screw**
After adjusting the ❶ C/CS adjustment ring to match the type of lens you are using, turn this screw with a screwdriver to lock the back focus.

**❻ Lens mount (C- or CS-mount)**
Used to attach a C- or CS-mount lens.

**❼ Lens mount cap**
Keep in place when not attaching a lens to the camera.

### Rear — B

**❽ IRIS LEVEL L/H adjustment screw**
This screw can be used to adjust the incident light level when using the CCD-iris or a DC servo lens. Before leaving the factory, the level is set for the CCD-Iris. If you wish to use a DC servo lens, turn the adjustment screw towards the H (high) side.

**❾ V PHASE (vertical phase) +/– screw**
Use this screw to compensate for vertical phase discrepancies which can occur when multiple cameras are connected to a switching device. Each camera's output is synchronized to the frequency of the power supply.

**❿ AGC ON/OFF switch**
When the AGC (automatic gain control) is switched on, the signal sensitivity automatically adjusts to the lighting conditions of the subject. The switch normally remains in the AGC position.

**⓫ Turbo-AGC TURBO/NORM switch**
When switched to TURBO, the Turbo-AGC function gives you a brighter picture under poor lighting conditions. Although noise increases slightly, signal elements are nearly doubled, thereby increasing picture definition. Switching this function on also activates the AGC function.

**⓬ BLC compensation ON/OFF switch**
Set the BLC (back light compensation) switch to BLC to compensate for scenes with a strong back light. The BLC function senses the strength of the back light and compensates accordingly. Switching this function on also activates the AGC function.

**⓭ CCD IRIS ON/OFF switch**
When switched on (switched to CCD IRIS) this function automatically adjusts the sensitivity in accordance with the incident light conditions. Set this switch to OFF when using an auto-iris lens. The factory setting is "CCD IRIS."

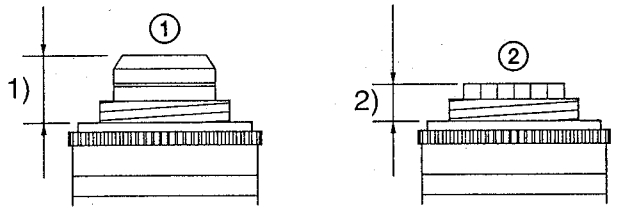
**⓮ VIDEO OUT connector**
This coaxial connector (BNC-type) outputs the video signals.

**⓯ GND (ground) terminal (SSC-C104 only)**
Connect this terminal to the ground.

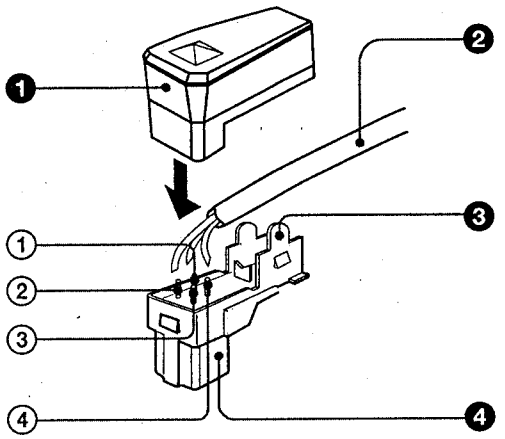
**⓰ 24V AC 1 and 2 terminals (SSC-C104 only)**
Connect these terminals to a 24 V AC power supply.

**⓱ Mains lead (SSC-C108P only)**
Connect to an AC power supply.

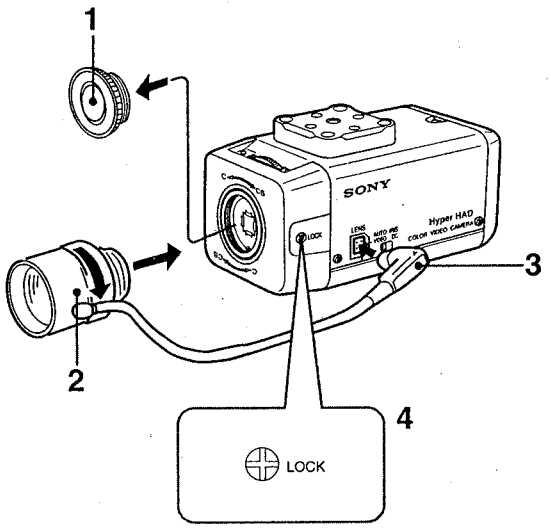
C




D




E




## Mounting the Lens

### Compatible lenses C

| | |
|---|---|
| ① C mount lens | 1) 9 mm (3/8 inch) or less |
| ② CS mount lens | 2) 4 mm (5/32 inch) or less |

**Notes**

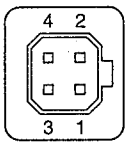
- Be sure to attach the lens mount cap when the lens is not mounted.
- Only lenses that are suitable for a 1/3-inch CCD should be used with this camera. If lenses for a 2/3-inch or 1/2-inch CCD are used, the view angle will be different.

### Fitting the auto-iris lens plug D

The camera is supplied with a plug for inserting into the LENS connector on the side of the camera. When fitting an auto-iris lens, you will need to replace the plug on the lens cable with the plug supplied. Replace as follows:

❶ Cover
❷ Audio-iris cable
❸ Rib (If the cable is thick and the plug cover does not seat properly, cut away this rib.)
❹ Lens plug

**1** Remove the plug cover and solder the lens cable wires to the pins on the plug supplied. The pin assignment is as follows:




| | Lens | |
|---|---|---|
| | DC-servo | VS-servo |
| ① Pin 3: | Drive (+) | Video signal |
| ② Pin 1: | Control (–) | Power supply (DC 9V 50mA) |
| ③ Pin 2: | Control (+) | Not used |
| ④ Pin 4: | Drive (–) | Ground |

**2** Put the cover on the plug.

### Fitting the lens E

When using an auto-iris lens, fit it as follows. For a manual-iris lens, omit step **3**.

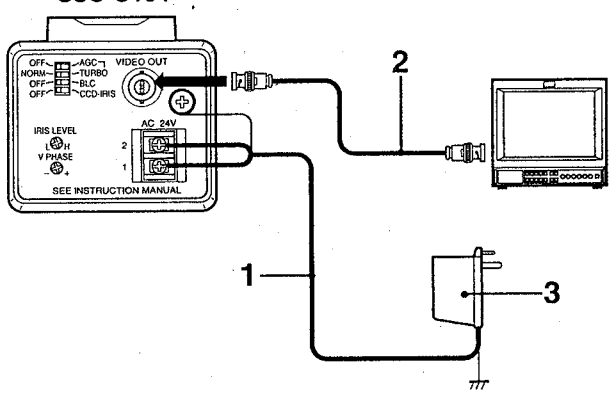
**1** Unscrew lens mount cap.
**2** Screw in the lens.
**3** First, replace the plug on the lens cable with the plug supplied with the camera. Then, connect the camera cable plug to the LENS socket.
**4** Loosen the back focus LOCK screw. Adjust the back focus by turning the C/CS adjustment ring in accordance with the type of lens fitted (C-mount or CS-mount). Once adjusted, tighten the back focus LOCK screw. (The factory setting is C-mount.)

**Note**

When attaching a C-mount type lens, be sure to turn the C/CS adjustment ring fully in the "C" direction. When the C/CS adjustment ring is set to "CS," mounting any lens with a mount projection of more than 4 mm may damage the internal parts of the camera.

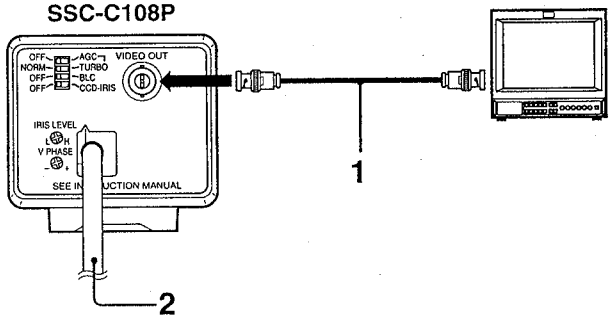
F

SSC-C104




G

SSC-C108P




## Connections

### Connecting the SSC-C104 F

1 Connect the power lines to the camera.
2 Connect the 75-ohm coaxial cable to the video monitor.
3 Connect the wall outlet transformer.

**Notes**

- When using a transformer without a ground lead (two-lead type), connect the output of the transformer to the 24V AC 1 and 2 terminals of the camera.
- When using a transformer with a ground lead (three-lead type), connect the ground lead to the GND terminal and the other two leads to the 24V AC 1 and 2 terminals.
- To prevent a short circuit, do not let the exposed transformer leads brush against conductive material when connecting to the AC 24V terminals.

### Connecting the SSC-C108P G

1 Connect the 75-ohm coaxial cable to the video monitor.
2 Connect the main lead.

## CCD Characteristics

The following are characteristics that may be observed when viewing an image produced by a CCD camera. These are inherent characteristics of the CCD camera and do not stem from any fault within the camera itself.

**Vertical smear**
This phenomenon occurs when viewing a very bright object.

**Patterned noise**
This is a fixed pattern which may appear over the entire monitor screen when the camera is operated at a high temperature.

**Jagged picture**
When viewing stripes, straight lines, or similar patterns, the image on the screen may appear jagged.

## Specifications

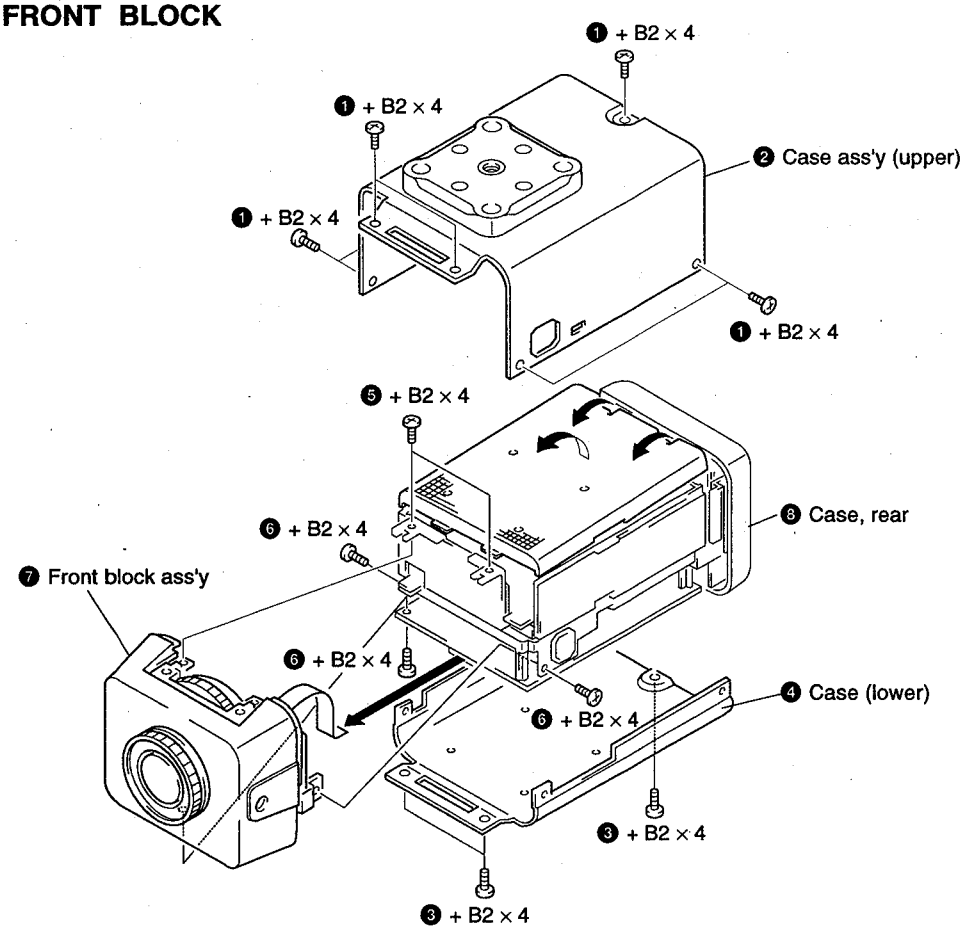
| | |
|---|---|
| Image device | 1/3" Interline transfer type CCD |
| Sensing area | 1/3" format (3.3 × 4.4 mm) |
| Effective picture elements | SSC-C104 : 510(H) × 492(V)<br>SSC-C108P : 500(H) × 582(V) |
| Horizontal resolution | 330 TV lines |
| Minimum illumination | 1.0 lux at F1.2 (Turbo AGC on) |
| CCD Iris | SSC-C104 : 1/60 to 1/100,000 second<br>SSC-C108P: 1/50 to 1/100,000 second |
| CCD Iris control | ON/OFF switchable |
| Lens Type | VIDEO/DC servo switchable |
| Power requirements | SSC-C104: AC24 V AC, 60Hz<br>SSC-C108P: 220-240V AC, 50Hz |
| Power consumption | SSC-C104: 3.5W<br>SSC-C108P: 4 W |
| Sync system | SSC-C104: AC line lock 60Hz<br>SSC-C108P: AC line lock 50Hz |
| AGC | ON/OFF/Turbo switchable |
| Signal system | SSC-C104 : NTSC color system<br>SSC-C108P : PAL color system |
| White Balance | ATW only |
| Video Signal | 1.0 volt peak to peak at 75 Ohms, sync negative |
| S/N ratio | 46dB (AGC off) |
| Phase control | V-phase adjustment (±90°) |
| Lens mount | C/CS mount (Adjustable) |
| Dimensions | SSC-C104: (w/h/d) 70 × 57 × 130 mm (2 7/8 × 2 1/4 × 5 1/8 inches)<br>SSC-C108P:(w/h/d) 70 × 57 × 130 mm (2 7/8 × 2 1/4 × 5 1/8 inches)<br>(excluding protruding parts) |
| Mounting plate height | 6.15mm, (1/4 inch) |
| Mass | SSC-C104: Approx. 550g (1 lb 2 oz.)<br>SSC-C108P: Approx. 760g (1 lb 6 oz.) |
| Operating temperature | –10°C to +50°C (14°F to 122°F) |
| Storage temperature | –40°C to +60°C (–40°F to 140°F) |
| Relative operating humidity | 20% to 80% (non condensing) |
| Relative storage humidity | 20% to 95% |
| Shock resistance | 70G |
| Auto-Iris lens connector | 4-pin |
| Supplied accessories | 4-pin plug for auto iris lens (1)<br>Operating Instructions (1) |

Design and specifications are subject to change without notice.

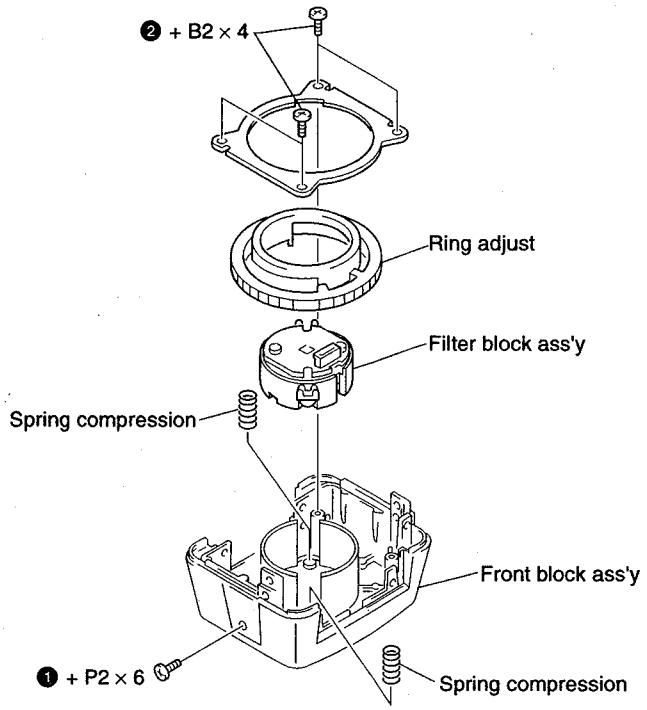
# SECTION 2
# SERVICE INFORMATION

## 2-1. REMOVAL OF THE MAIN PARTS

### 2-1-1. FRONT BLOCK

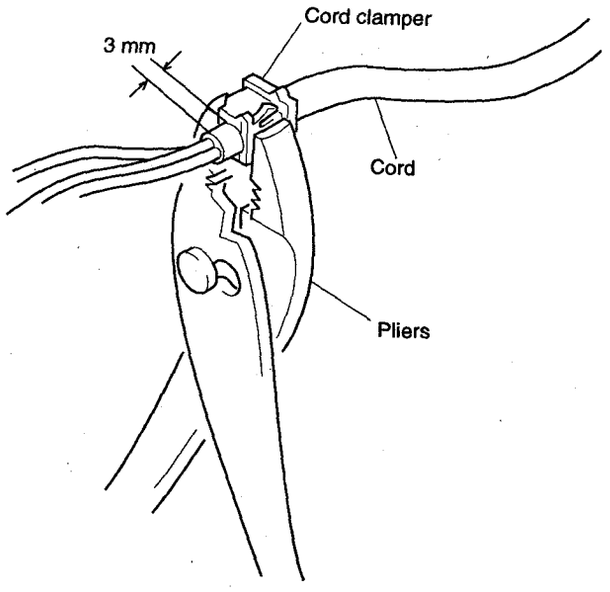



### 2-1-2. FILTER BLOCK



## 2-2. Replacement of Power Cord (SSC-C108P only)

When replacing the power cord, use a new cord clamper and secure the clamper onto the cord with a pair of pliers first, and then attach the rear panel.



# SECTION 3
# THEORY OF OPERATION

## 3-1. BI-98 Board

The BI-98 board has a CCD imager. The CCD chip surface is arranged with photosensors. The incident light is converted to electric charge according to the intensity of the light by the photosensors, read to registers from the photose nsors, and then transmitted to the output.

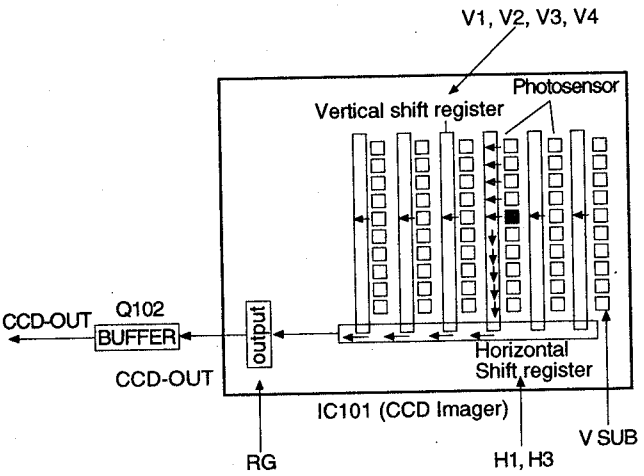
The registers consist of vertical registers and horizontal registers, and the electric charge converted by the photosensors is transmitted to the vertical registers adjoining the photosensors in each field.

The electric charge transmitted to the vertical registers are transmitted in the vertical direction according to the vertical transmission clocks V1, V2, V3, and V4, and sequentially transmitted to the horizontal registers.

The horizontal registers transmit to the output the electric charge in the horizontal direction according to the horizontal transmission clocks H1 and H2.

The capacitor in the output block converts the charge into the voltage signal, and the signal is output from the IC101. These signal are then passed through the Q102 buffer and transmitted to the MB-653 board.

Interline Transmission




## 3-2. MB-653 Board

The MB-653 board is composed of the following circuit blocks. All signal processings are performed here.

(1) Sample hold/AGC
(2) TG/SG/CCD-IRIS
(3) V driver
(4) VCO/PLL/Line-Lock
(5) Auto iris
(6) Chroma matrix
(7) White balance
(8) Luminance signal processor
(9) Encoder

Each block is described in detail in the following.

(1) Sample hold/AGC (IC201 CXA1390AR)

The signals from the CCD imager are separated into DATA and PG, sample-held by the respective timings (SHP, SHD), and then signal divided so that the amplifier noise and reset noise generated by the CCD mutually eliminate each other, making use of the fact that the superimpose components of the precharger and those of the data are the same. This mechanism is called the correlation duplex sampling circuit (CDS circuit).

The noise components of the DATA and PG signals input to IC201 are eliminated by the sample hold pulse, and the differences between these signals are calculated to perform signal-division. After the video signal is separated, it is passed through the AGC amplifier and output to the MB-653 board.

(2) TG/SG/CCD-IRIS (IC302 CXD2401/IC303 CXD1159)

The pulse for driving the CCD is made by IC302 by synchronizing with the 28 MHz basic clock.

- H1, H2 : CCD imager H register drive pulses
- XV1,XV2, XV3, XV4 : CCD imager V register drive pulses
- PG : Precharge gate pulse
- CL1, CL2, CL4 : Clamp pulses
- XSHP, XSHD : Signal division sample hold pulses
- XSP1, XSP2 : Color division sample hold pulses
- XSH1, XSPH2 : Luminance signal division sample hold pulses
- XDL1, XDL2 : Color division CCD1H delay line drive pulses

- X SUB : Charge discard pulse (Shutter speed control)

The sync signal pulse is made by IC303 based on the CL pulse of IC302.

- SYNC : Composite sync signal
- HD, VD : Horizontal and vertical drive signals
- BF : Burst flag signal
- BLK : Blanking pulse signal
- LALT : Line alternate signal (PAL)

Because IC302 incorporates a level comparator, the CCD-IRIS can be realized by converting the iris control signal from IC201 to a DC value by Q701, Q702, and IC702 and inputting this signal to pin 39 of IC302.

(3) V driver (IC301 CXD1267)
The V register drive pulses (V1, V2, V3, V4) of the CCD imager and the electric charge discard pulse (V SUB) are driven by the drive IC (IC301) and output.

(4) VCO/PLL/Line-Lock (IC304 TC7S04F/IC601 TC5081/IC602 TC74HC132)
This cameras sync system only has the Line Lock. The V-PULSE extracted from the power line is compared with the internal VD pulse compose the PLL. The VCO is based on this PLL. This VCO output serves as the 28 MHz basic clock and supplied to the TG.
First, the V-PULSE from the power line is subjected to waveform-shaping by IC602, and input to the PLL IC (IC601) together with the internal VD. The control signal which passed through the Low-Pass Filter (C602, C604, C605, R601, R602) is input to the LC oscillation VCO circuit composed of IC304 and set as the designated voltage (2.9V) by CT301.

(5) Auto Iris (IC201 CXA1390/Q701/Q702/IC702 μPC358)
The control signal (pin 17 of IC201) extracted from the front of the AGC amplifier controls the back light correction circuit, DC servo lens, and VS servo lens.
In the DC servo lens, the control signal is passed through the buffer Q701, mixed with the average value and peak value, and output to the drive IC (IC702 1/2). Level adjustment is performed by changing the reference voltage (pin 3 of IC701).
In the CCD-IRIS mode, the control signal is also used as the reference voltage of the buffer amplifier (IC702 1/2) and controls the IC302 comparator input value, regulate the shutter speed, and control the video signal output level.
In the VS servo lens, the iris signal (video signal without sync signal components) is passed through the Q701 buffer and transmitted to the auto iris lens.

(6) Chroma Matrix (IC403 CXA1391)
Inside the IC403, C0 (S2–S1) and Y0 (S1+S2) are separated from the S1 and S2 signals, matrixed to make the RGB signal and delayed to make the V aperture signal.
The RGB signal is made using the C1 signal delayed by 1H because the C0 signal is the linear sequential signal of the 2R-G signal and – (2B-G) signal.
The C1 signal is made by inputting the reverse polarity output from pin 46 of IC403 to the 1H delay line IC501. The signal is then passed through the Q501 buffer, input to pin 48 of IC403, passed through the gain control amplifier, and input to the RGB matrix circuit.
In the gain control amplifier, the C0 signal and C1 signal are set to the same level by the voltage of pin 47 of IC103. The 1H delay line is a CCD delay element. It is operated in a 2Fsc period by the XDL1 and XDL2 drive clocks.
The V aperture signal requires three lines of signals actually, but in this case, only two lines of signals are provided (simplified). The Y0 signal is delayed by 1H to create the Y1 signal. The Y0 and Y1 signal are used as the Y signal in the RGB matrix. The Y0 signal is output with positive polarity from pin 52 of IC403, and input to pin 3 of IC501. In this pin, it becomes a Y1 signal delayed by 1H, passed through the Q501 buffer with negative polarity, and input to pin 55 of IC403. It is then added to the Y0 signal in the gain control amplifier, and input to the matrix circuit.

In the gain control amplifier, the Y0 and Y1 signals are set to the same level by the voltage of pin 54 of IC403. The RGB signals are made from these 2R-G, - (2B-G), and Y signals.

(7) White Balance (IC401 μPC324/IC402 NJU7022/ IC403 CXA1391)
The RGB signals each pass through the 2-stage gain amplifier to produce the white components. The 3200°K reference setting is simplified, and the R and B control values (RV401, RV408) are adjusted and balanced by fixing the gain of pins 37 and 40 of IC403 so that the white components can be currently produced

when the reference chart is exposed. To reduce color inconsistency in high luminance, when G exceeds a certain value, the RGB are set so that they settle at the same level, using the highlight mask circuit which is composed of Q405, Q406, Q407, and IC401.

(8) Luminance signal processing (IC403 CXA1391/IC801 CXA1592)
Taking into consideration the delay generated by chroma matrix processing, the luminance signal is passed through FL401 and FL402 to adjust the delay amount and input to pin 64 of IC403. The Y signal which has been gamma corrected is output from pin 5, passed through the delay line FL801 for adjusting the Y/C phase, and input to pin 35 of IC801.

(9) Encoder (IC801, CXA1592)
The color difference signals (R-Y, B-Y) output from IC403 are each input to pins 1 and 47 of IC801. These are added with the modulated color difference signals and output from pin 16 of IC801, then passed through the band pass filter, and returned to pin 18 again. Next, they are mixed with the luminance signal and output from pin 21 as the composite signal. The luminance signal is added with the H aperture correction signal (pin 33) and V aperture correction signal (pin 42), and added with the sync signal.
The H aperture signal is level-adjusted by the voltage of pin 36 of IC801. After the noise slice level is regulated, it is added to the luminance signal. By linking the level adjustment voltage to AGC, when AGC rises during low luminance, the aperture correction amount is dropped to decrease the noise.
The V aperture signal is passed through FL802 where its phase is adjusted to the Y signal, and then input to pin 42 of IC801.

## 3-3. AC-172 Board, VCA-6 Board (SSC-C108P only)

These boards compose the power supply block. A sub-board VCA-6 is mounted on the main AC-172 board. The RCC PWM control method is adopted as the circuit method.
The commercial-use power supply input through the noise filter composed of the capacitor and line filter is rectified by D401, and input to the switching transformer T401. The PWM control IC (IC401) drives the switching FET (Q401) to perform power transmission. The oscillation frequency of this control IC is regulated to 100 KHz by the capacitor of pin 7. The voltage is extracted from the Q401 source via R412 and R413 to impose over-current protection. The snubber circuit composed of D403, R408, and C412 controls the switching surge voltage to below 450V.
The secondary side output power transmitted takes 5V as its reference. It is compared with the reference value of the IC504 shunt regulator of the VCA-6 board.
If higher than the prescribed voltage, current is sent to the photo coupler PH401 in high volume to decrease the IC402 comparator voltage and shorten the ON time.
The reference value of the shunt regulator IC501 is adjusted by VR501 of the VCA-6 board so that the prescribed voltage value can be set.
The 5V output passed through the ripple filters C420 to C425 and L401 is raised to 9V, 15V, and -8.5V in the step-up circuit by the PWM method by IC503 (TL1451) of the VCA-6 board, and supplied to the main board. The forced start up circuit composed of IC501 is incorporated here to raise the reliability of the power supply.

## 3-4. IR-17 Board

This board serves as the signal switching relay board of the auto iris lens.
The output signal is switched to the DC servo or VS servo by SW1.

## 3-5. CT-168 Board (SSC-C104 only)

This board is a connector board incorporating the function selection switch, AC24V input terminal, and video signal output connector (BNC).
The CCD-IRIS or DC-servo lens level adjustment VR and V-PHASE adjustment VR are incorporated as the user control.

## 3-6. CT-169 Board (SSC-C108P only)

This board is a connector board incorporating a function selection switch and video signal output connector (BNC).
The CCD-IRIS or DC-servo lens level adjustment VR and V-PHASE adjustment VR are incorporated as the user control.

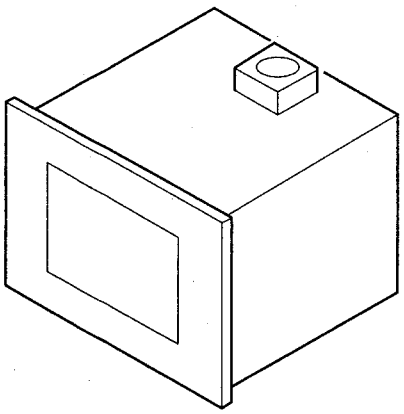
# SECTION 4
# ADJUSTMENT

## 4-1. PREPARATION

### 4-1-1. Adjustment Fixture and Equipment

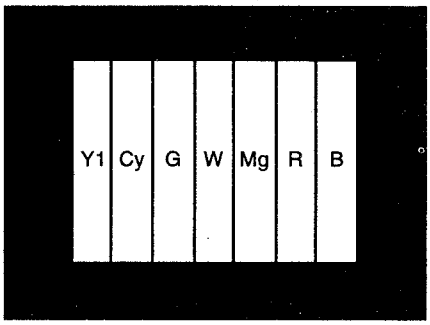
| J-6029-140-A | Pattern Box PTB-500 |
|---|---|

•Light source for test chart AC 90 ~ 240 V



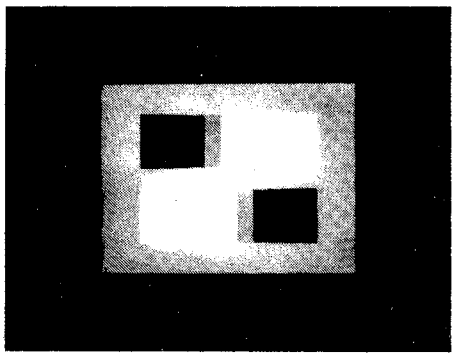
| J-6020-250-A | Color Bar Chart |
|---|---|

•For color adjustment



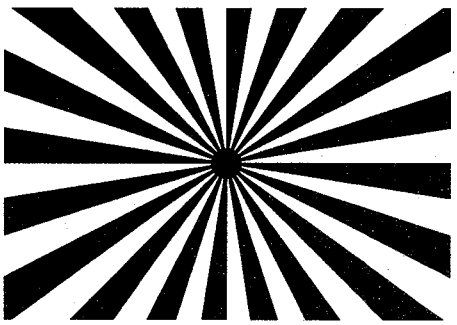

| J-6026-130-B | Gray Scale Chart |
|---|---|

•For video level and gamma adjustment

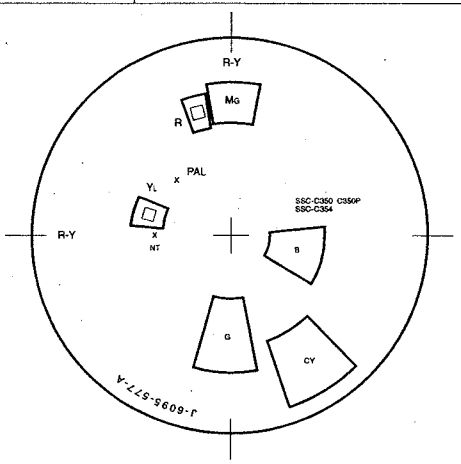


| J-6024-340-B | Siemens Star Chart |
|---|---|

•For back forcus adjustment

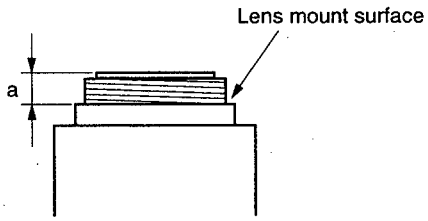


| J-6095-577-A | Vectorscope Scale |
|---|---|



Commercial measuring equipment and fixture

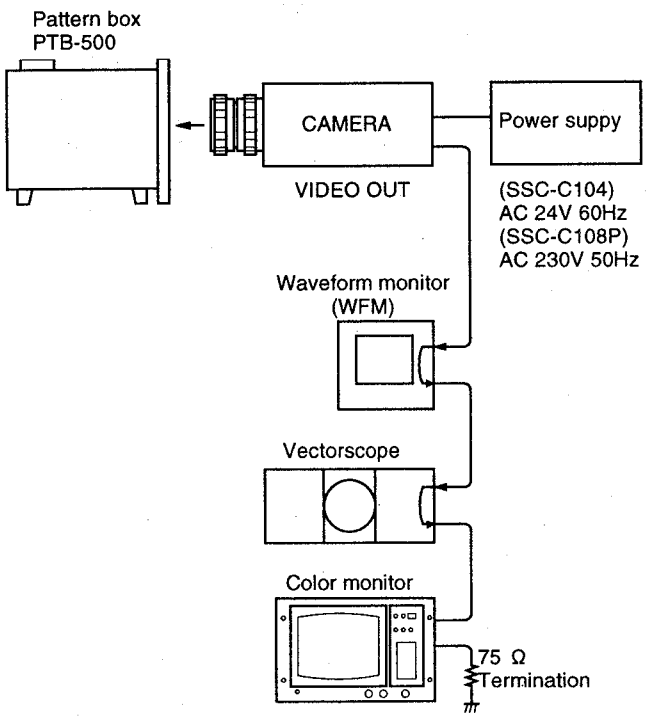
- Oscilloscope
- Vectorscope
- Waveform Monitor (WFM)
- Digital Voltmeter
- Color Monitor
- Lens (1/2 inch C/CS mount and manual iris type)
  Adjust C/CS adjusting ring on the body.




a : should be under 9 mm (C mount) or 4mm (CS mount)

- ND Filter
  ND 4 (25%) 50 mm Square made by Kenko

### 4-1-2. Connection for Adjustment

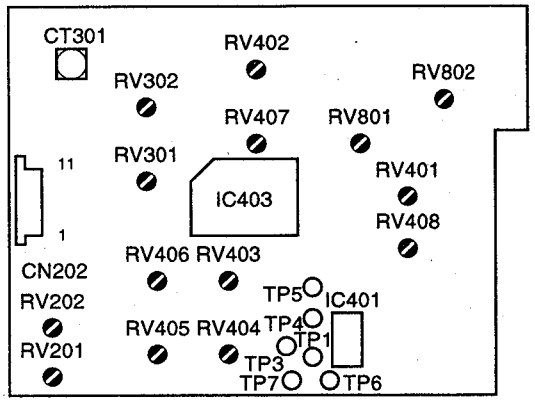



## 4-2. VCO ADJUSTMENT

| | |
|---|---|
| Object | : Close "C" |
| Equipment | : Digital Voltmeter |
| Measurement | : MB-653 Board TP1 (CN202-1pin) |
| Adjustment point | :MB-653 Board CT301 |
| Specification | : 2.9 ± 0.1 V |

## 4-3. SIGNAL PROCESS ADJUSTMENT

**[Adjustment Location]**




MB-653 BOARD – A SIDE –

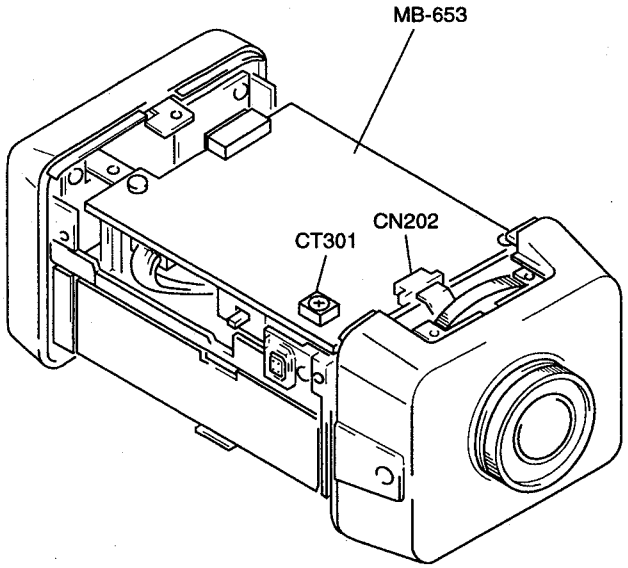
**[Switch Setting]**

- Rear Panel
  AGC ..... OFF
  TURBO ..... NORM
  BLC ..... OFF
  CCD IRIS .... OFF

**[PGLL, V SUB Setting Value]**

According to the set values of the CCD image element, this adjustment should be made.
The values to be set are displayed in two-digit codes at the back of each CCD image element.
This code is also posted on the front panel.
If the CCD image element has not been replaced, refer to the code posted on the front panel and adjust.
If it has been replaced correct this code posted to the code displayed at the back of the new CCD image element.

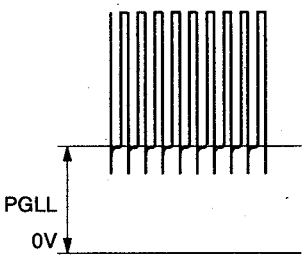
Code..... 2-digit display :□ □
↑ ↑
PGLL code V SUB code




## 4-3-1. PGLL Adjustment

Object : Close "C"
Equipment :Oscilloscope (DC 500 mV 0.2 μS)
Measurement point : MB-653 Board TP4 (CN202-4pin)
Adjustment point : MB-653 Board RV302
Specification : Set point ± 0.15 V
Adjustment methoed :
Referring to the chart, adjust to the voltage set point in accordance with the PGLL voltage (left figure of the two) posted on the front panel.

| PGLL code | PGLL (V) |
|---|---|
| 1 | 1.0 |
| 2 | 1.5 |
| 3 | 2.0 |
| 4 | 2.5 |
| 5 | 3.0 |
| 6 | 3.5 |
| 7 | 4.0 |



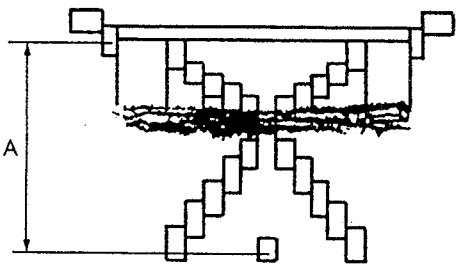

## 4-3-2. V SUB Voltage Adjustment

Object : Close "C"
Equipment : Digital Voltmeter
Measurement point : MB-653 Board TP5 (CN202-5pin)
Adjustment point : MB-653 Board RV301
Specification : Set point ± 0.15 V
Adjustment methoed :
Referring to the chart, adjust to the voltage set point in accordance with the code of the V SUB (right figure of the two) posted on the front panel.

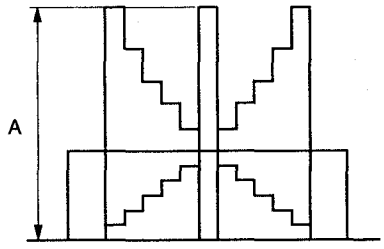
| V SUB code | V SUB (V) | V SUB code | V SUB (V) |
|---|---|---|---|
| E | 9.0 | Q | 14.0 |
| F | 9.5 | R | 14.5 |
| G | 10.0 | S | 15.0 |
| H | 10.5 | T | 15.5 |
| J | 11.0 | U | 16.0 |
| K | 11.5 | V | 16.5 |
| L | 12.0 | W | 17.0 |
| M | 12.5 | X | 17.5 |
| N | 13.0 | Y | 18.0 |
| P | 13.5 | Z | 18.5 |

## 4-3-3. GAIN 0 dB Adjustment

(1)
Object :Grayscale chart
Equipment :Oscilloscope (AC 50 mV 10 μS)
Measurement point :MB-653 Board TP3 (CN202-3pin)
(GND: CN201 1-pin)
Adjustment point :Lens iris
Specification :A = 250 ± 20 mV

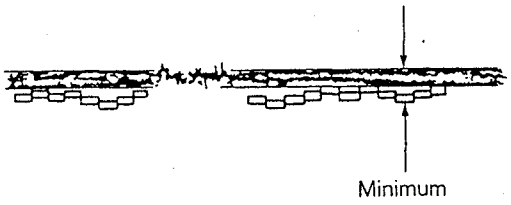



(2)
Object :Grayscale chart
Equipment :Oscilloscope (AC 100 mV 10 μS)
Measurement point :MB-653 Board TP6 (CN202-6pin)
Adjustment point :MB-653 Board RV202
Specification :A = 500 ± 30 mV




### 4-3-4. Y1 GAIN Adjustment

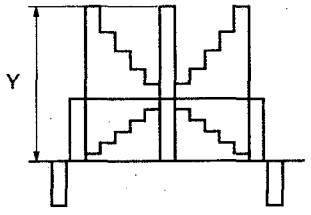
Object : Grayscale chart
Equipment : Oscilloscope (AC 100 mV 10 μS)
Measurement point : MB-653 Board TP7 (CN202-7pin)
Adjustment point : MB-653 Board RV407
Adjustment method :
Adjust the RV407 so that waveform amplitude is minimized.




### 4-3-5. LEVEL Adjustment

Object : Grayscale chart
Equipment : Waveform monitor
Adjustment point : MB-653 Board RV802
Measurement point : VIDEO OUT
Adjustment method :

1) Adjust the RV802 so that the white level is the adjustment value Y.



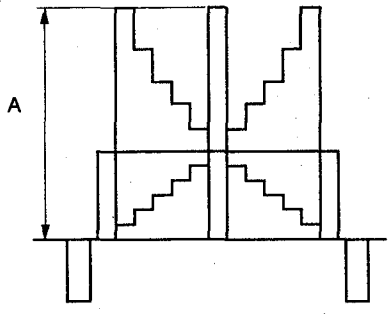

(NTSC)
Y=100±2 IRE

(PAL)
Y=700±15 mV

### 4-3-6. AGC LEVEL Adjustment

Object : Grayscale chart
Equipment : Waveform monitor
Adjustment point : MB-653 Board RV201
Measurement point : VIDO OUT
Specification : (NTSC) A = 90 ± 5 IRE
(PAL) A = 630 ± 35 mV
Adjustment methoed :

1) Set the AGC switch/Rear Panel to the on.

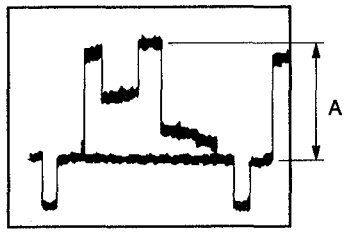



2) Install the ND filter (25%) to the lens and adjust.
3) Set the AGC switch/Rear Panel to OFF after adjustment.

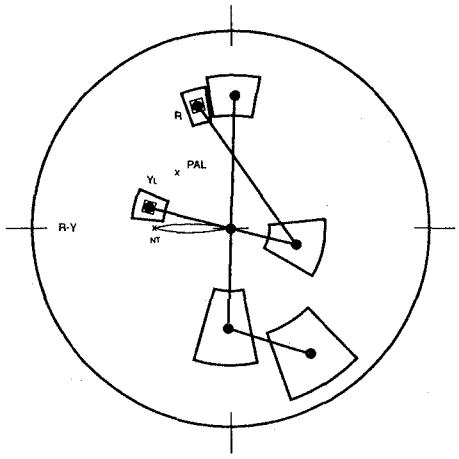
## 4-3-7. C1 GAIN Adjustment

Object : Color-bar chart
Equipment : Waveform monitor, Vectorscope
Adjustment point : MB-653 Board RV402
Measurement point : VIDO OUT
Specification : (NTSC) A = 90 ± 2 IRE
(PAL) A = 630 ± 15 mV
Adjustment methoed :

1) Adjust the lens iris so that the white level of the color bar chart is A.



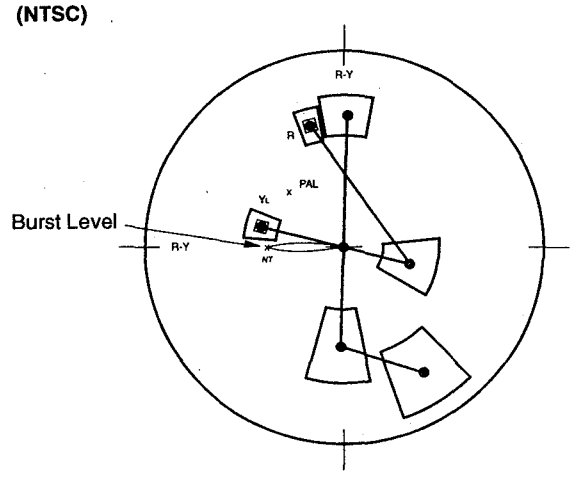

2) Adjust the RV402 so that each color becomes one beam spot on the vectorscope.



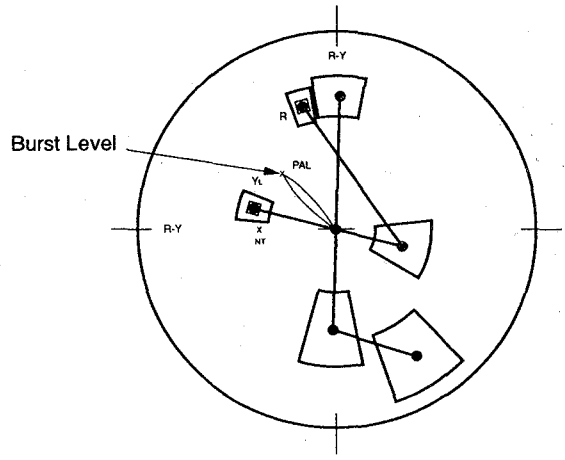

## 4-3-8. Burst Level Adjustment

Object : Color-bar chart
Equipment : Vectorscope
Measurement point : VIDO OUT
Adjustment point : MB-653 Board RV801
Adjustment methoed :
Adjust the RV801 so that the burst level equals the standerd value (75%) of the vectorscope.

**(NTSC)**

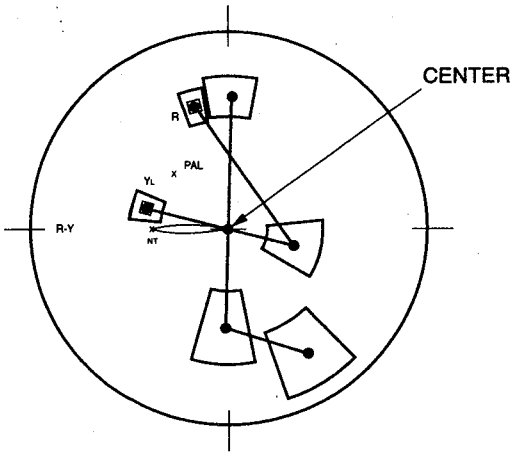



**(PAL)**



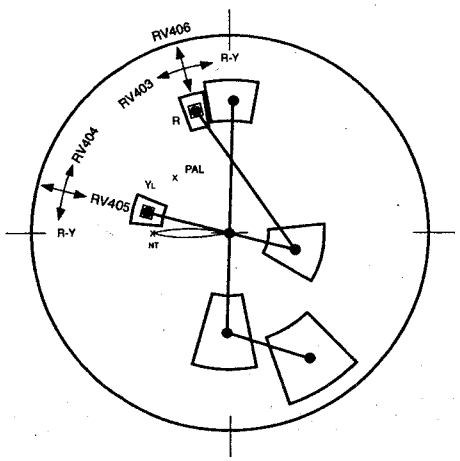
### 4-3-9. WB Preset Adjustment

Object : Color-bar chart
Equipment : Vectorscope
Measurement point : VIDO OUT
Adjustment point : MB-653 Board RV401, RV408
Adjustment methoed :
Adjust the RV401 and RV408 so that white of the color bar chart is positioned to rhe vector scope center.



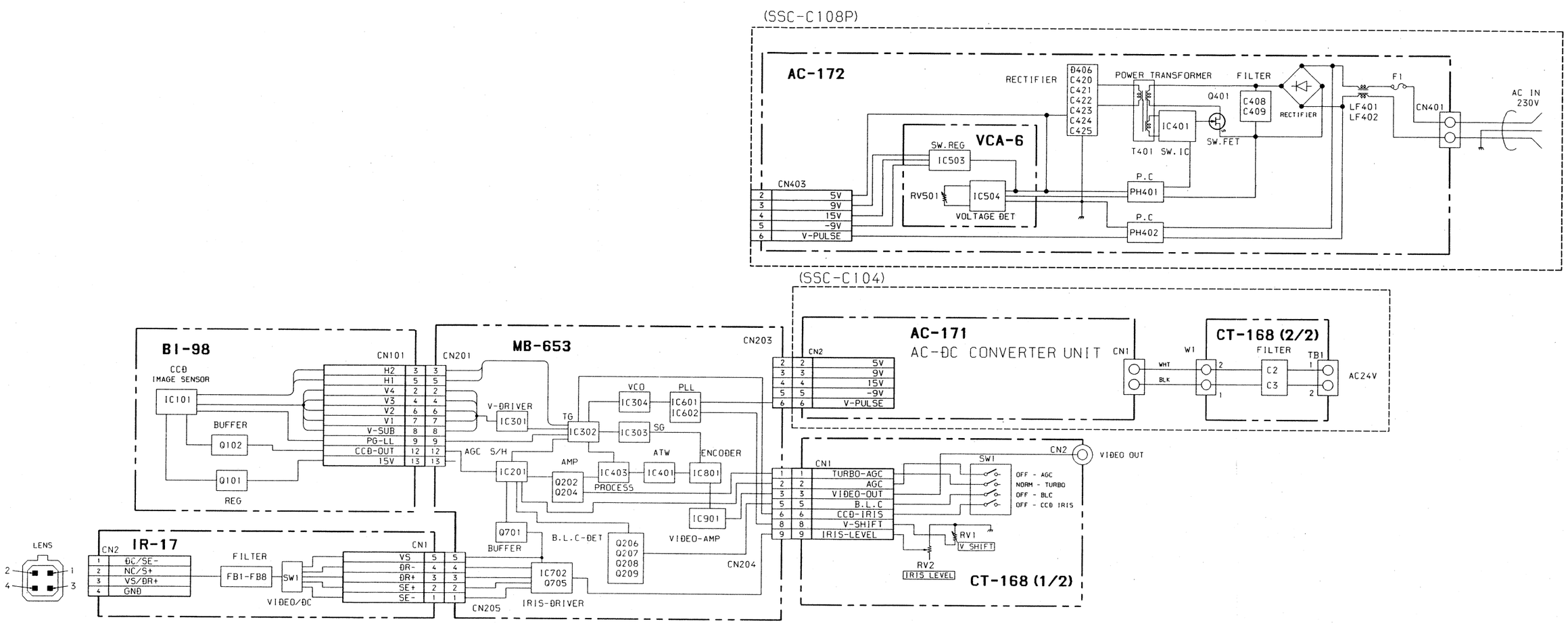

### 4-3-10. Hue Adjustment

Object : Color-bar chart
Equipment : Vectorscope
Measurement point : VIDO OUT
Adjusiment point : MB-653 Board RV403, RV404, RV405, RV406
Adjustment methoed :
Adjust the RV403, RV404, RV405 and RV406 so that each color is positioned within the standard scales on the vectorscop.
(Place R and YL into the inner scales.)

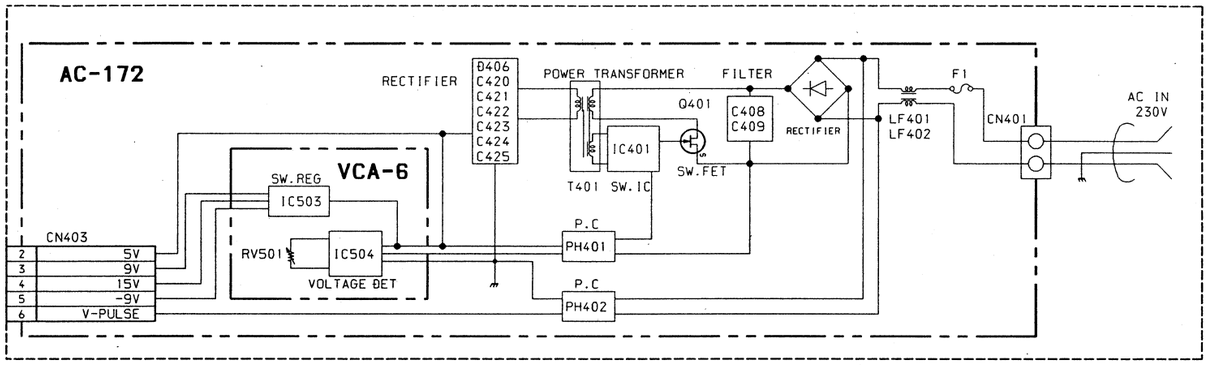


# SECTION 5
# DIAGRAMS

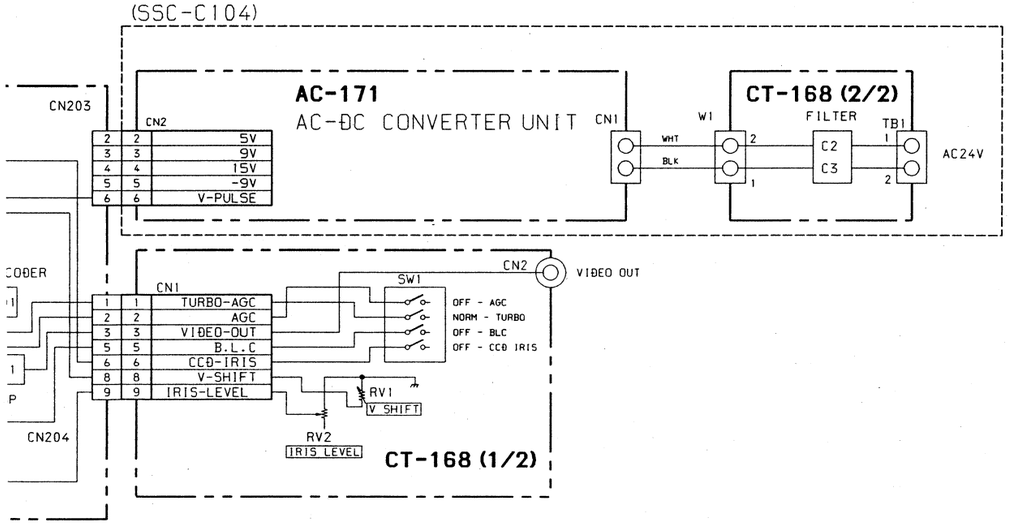
## 5-1. BLOCK DIAGRAM



(SSC-C108P)



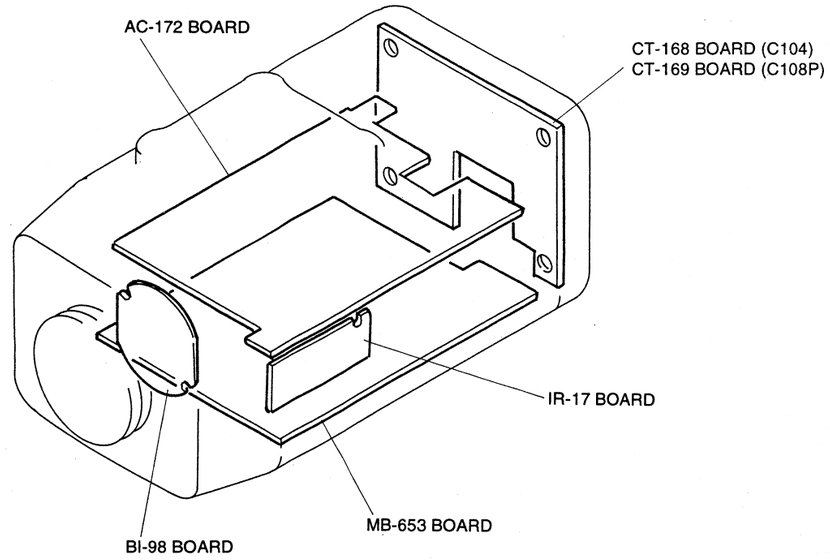

(SSC-C104)







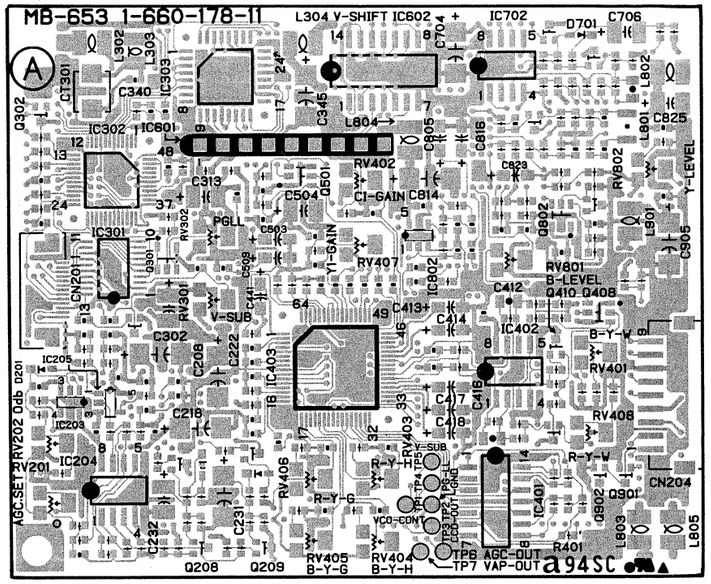

## 5-2. BOARD LOCATION



## 5-3. SCHEMATIC DIAGRAMS AND PRINTED CIRCUIT BOARDS

MB-653 BOARD

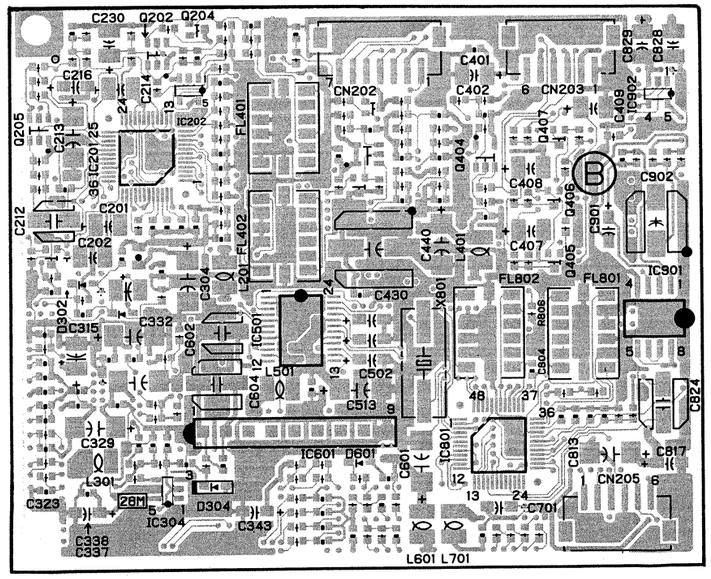
| | | | |
|---|---|---|---|
| CN202 | D-3 | Q202 | D-1 |
| CN203 | D-4 | Q204 | D-2 |
| CN205 | A-5 | Q205 | D-1 |
| | | Q404 | D-4 |
| D302 | B-1 | Q405 | C-5 |
| D304 | A-2 | Q406 | C-5 |
| D601 | A-3 | Q407 | D-4 |
| FL401 | D-2 | X801 | C-4 |
| FL402 | C-2 | | |
| FL801 | C-5 | | |
| FL802 | C-4 | | |
| IC201 | C-1 | | |
| IC202 | D-2 | | |
| IC304 | A-2 | | |
| IC501 | B-2 | | |
| IC601 | A-3 | | |
| IC801 | A-4 | | |
| IC901 | C-5 | | |
| IC902 | D-5 | | |




**MB-653 BOARD –A SIDE–**
**1-660-178-11**

MB653 BOARD

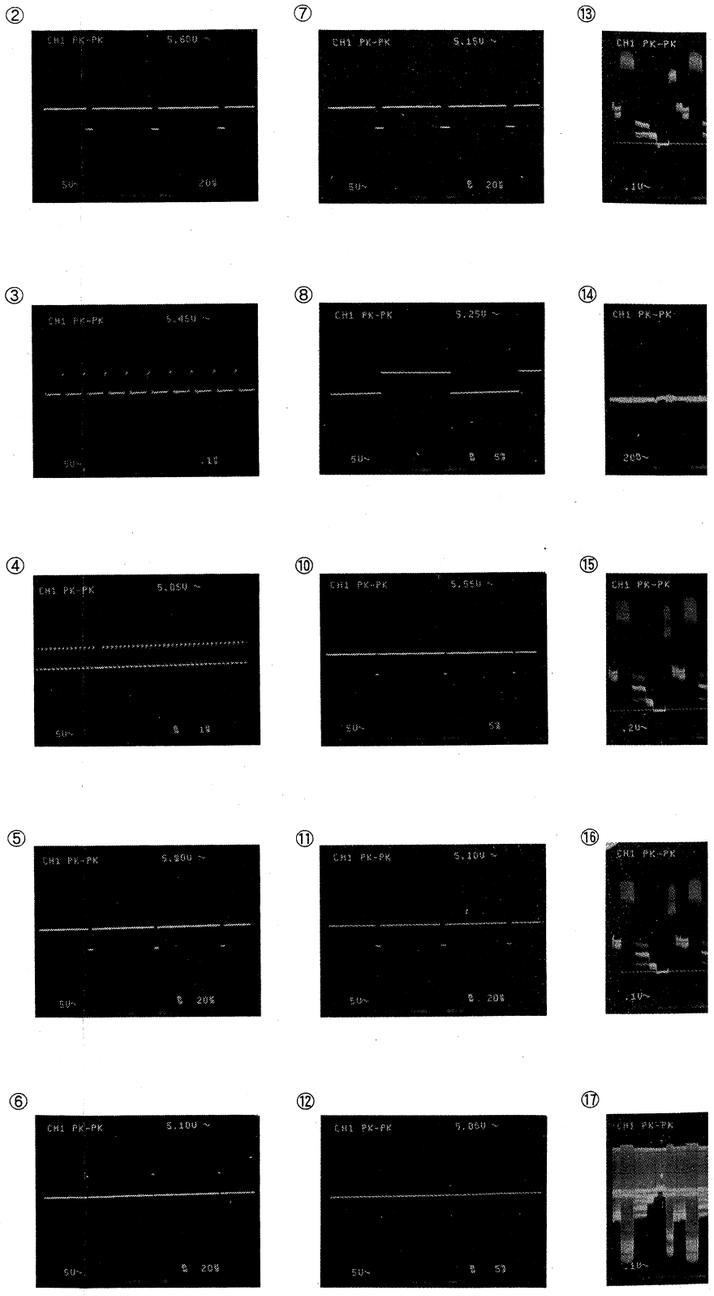
| | | | |
|---|---|---|---|
| CN201 | B-1 | Q208 | D-2 |
| CN204 | D-5 | Q209 | D-2 |
| CT301 | A-1 | Q302 | A-1 |
| | | Q408 | C-5 |
| D201 | C-1 | Q410 | C-4 |
| D701 | A-5 | Q501 | B-3 |
| IC203 | D-1 | Q802 | B-4 |
| IC204 | D-1 | Q901 | D-5 |
| IC205 | C-1 | Q902 | D-5 |
| IC301 | B-1 | | |
| IC302 | A-1 | | |
| IC303 | A-2 | | |
| IC401 | D-4 | | |
| IC402 | C-4 | | |
| IC403 | C-2 | | |
| IC601 | A-2 | | |
| IC602 | A-3 | | |
| IC702 | A-4 | | |
| IC801 | B-3 | | |

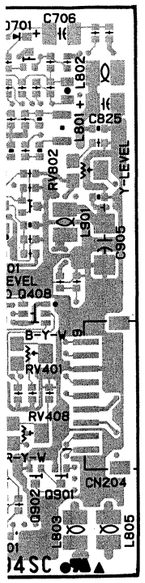



**MB-653 BOARD –B SIDE–**
**1-660-178-11**





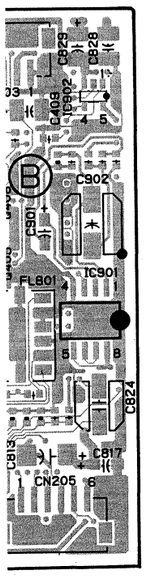




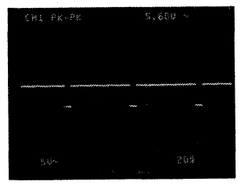

5

**MB-653 BOARD –A SIDE–**
1-660-178-11

5




**MB-653 BOARD –B SIDE–**
1-660-178-11

②
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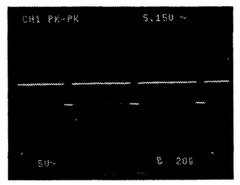


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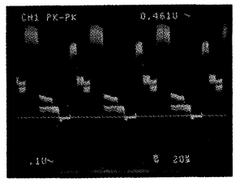


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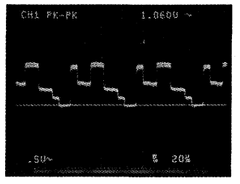


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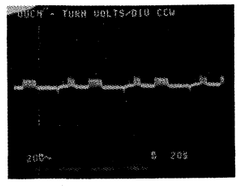


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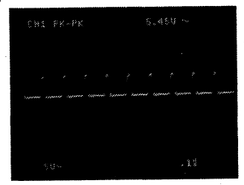


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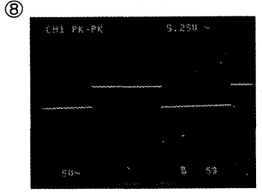


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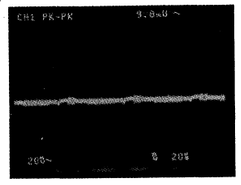


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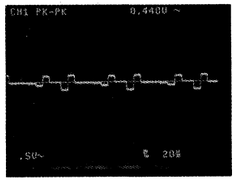


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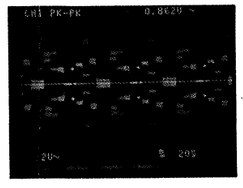


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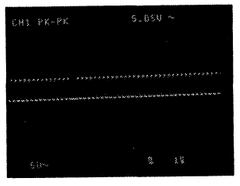


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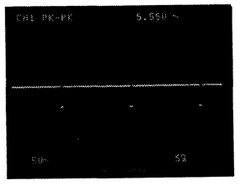


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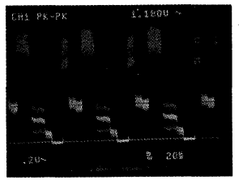


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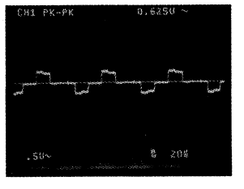


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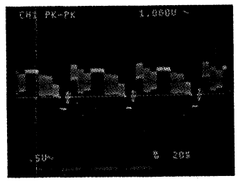


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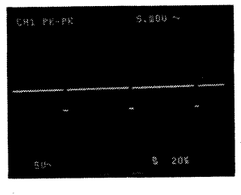
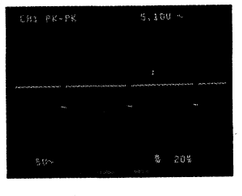



⑪
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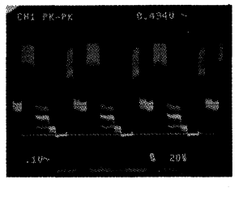


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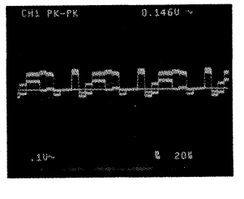


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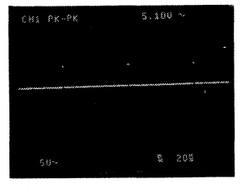


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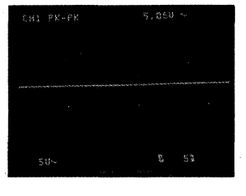


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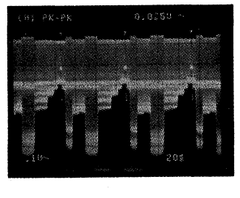


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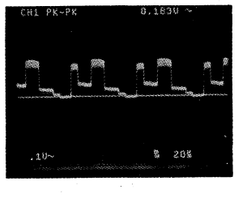
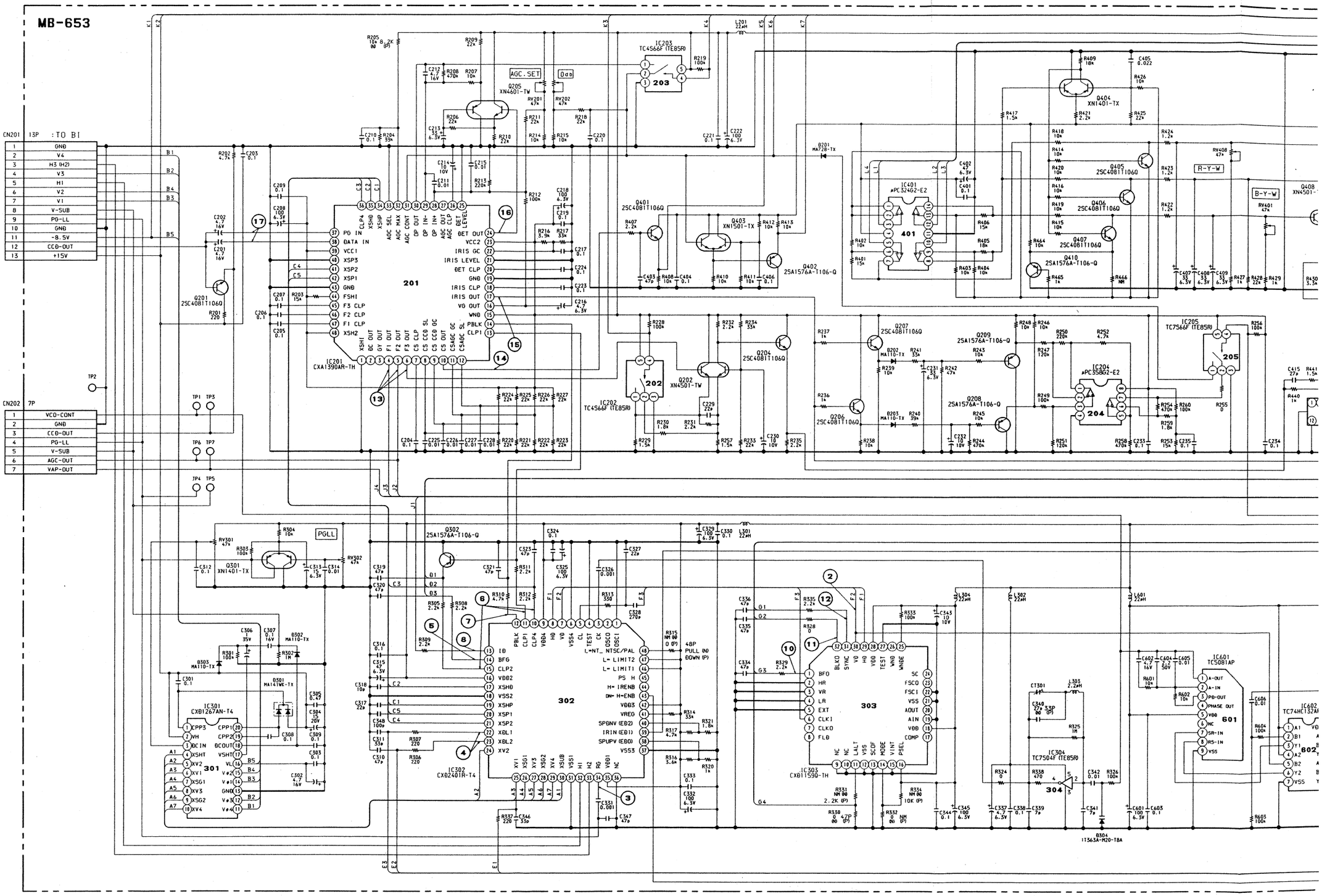
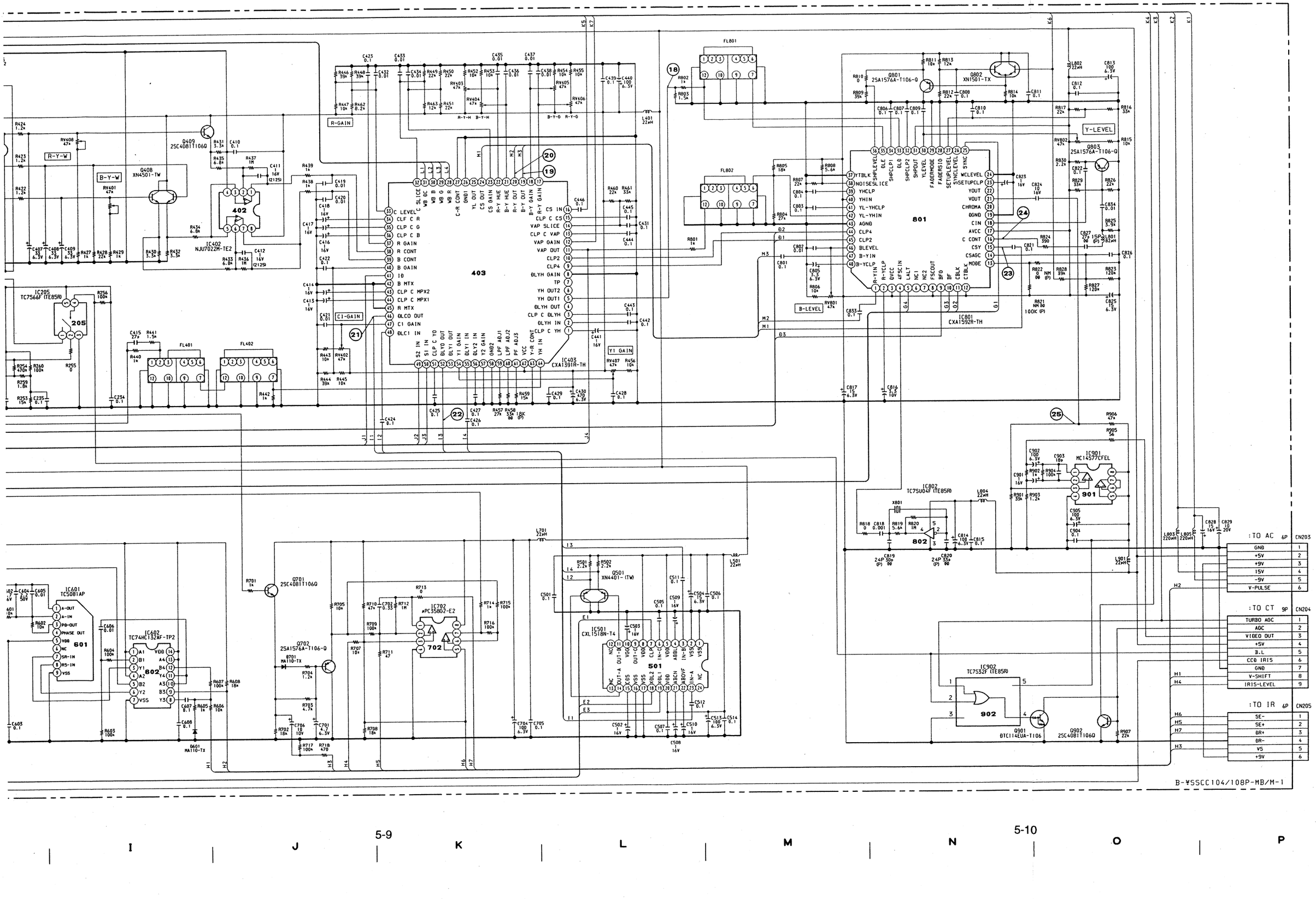


## MB-653 BOARD

### NOTE

1. NM:NO MOUNT
2. (N) :NTSC only
3. (P) :PAL only



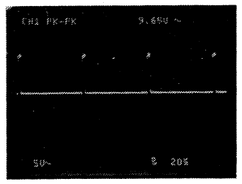

R-GAIN
B-Y-W
R-Y-W
Y-LEVEL
C1-GAIN
Y1 GAIN
B-LEVEL
IC205 TC7S66F (TE85R)
IC601 TC5081AP
IC602 TC74HC132AF-TP2
IC402 NJU7022M-TE2
IC403 CXA1391R-TH
IC801 CXA1592R-TH
IC802 TC7SU04F (TE85R)
IC901 MC14577CFEL
IC902 TC7S32F (TE85R)
IC501 CXL1518N-T4
IC702 #PC358G2-E2
Q409 2SC4081T106Q
Q408 XN4501-TW
Q501 XN4401-(TW)
Q701 2SC4081T106Q
Q702 2SA1576A-T106-Q
Q801 2SA1576A-T106-Q
Q802 XN1501-TX
Q803 2SA1576A-T106-Q
Q901 BTC114EUA-T106
Q902 2SC4081T106Q
FL401
FL402
FL801
FL802
:TO AC 6P CN203
GND 1
+5V 2
+9V 3
15V 4
-9V 5
V-PULSE 6
:TO CT 9P CN204
TURBO AGC 1
AGC 2
VIDEO OUT 3
+5V 4
B.L 5
CCD IRIS 6
GND 7
V-SHIFT 8
IRIS-LEVEL 9
:TO IR 6P CN205
SE- 1
SE+ 2
ØR+ 3
ØR- 4
VS 5
+9V 6
B-¥SSCC104/108P-MB/M-1

5-9 5-10

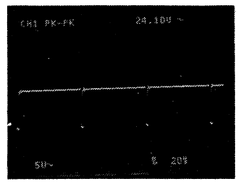
# FRAME WIRING AC-172, VCA-6, BI-98, CT-168, IR-17 BOARD

## BI-98 BOARD

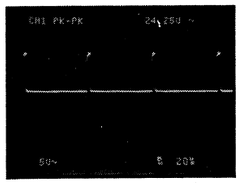
①



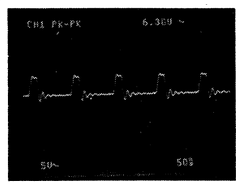

⑤



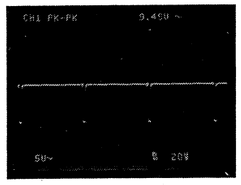

②



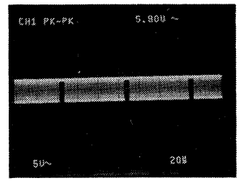

⑥



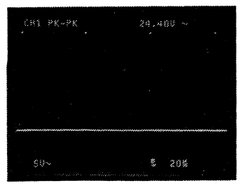

③



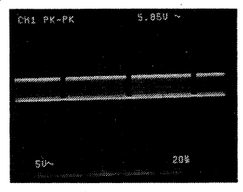

⑦




④

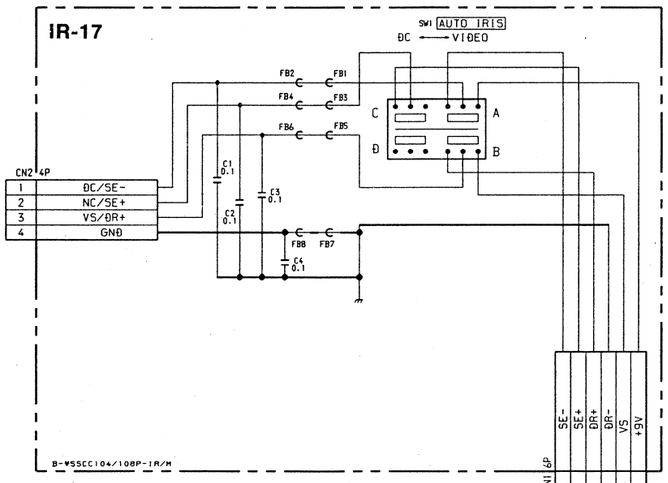


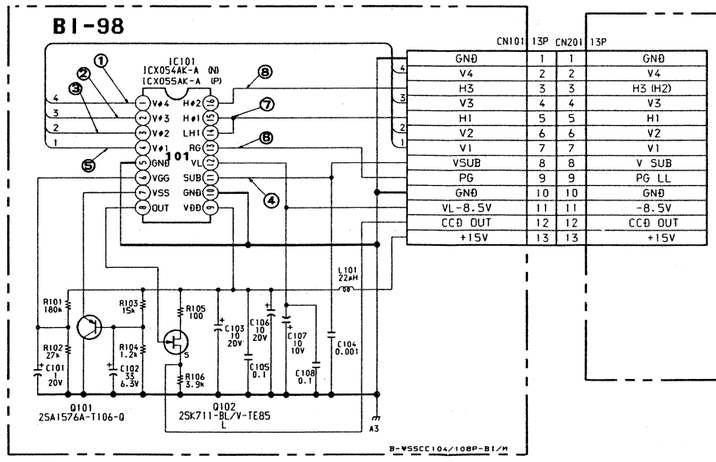

⑧



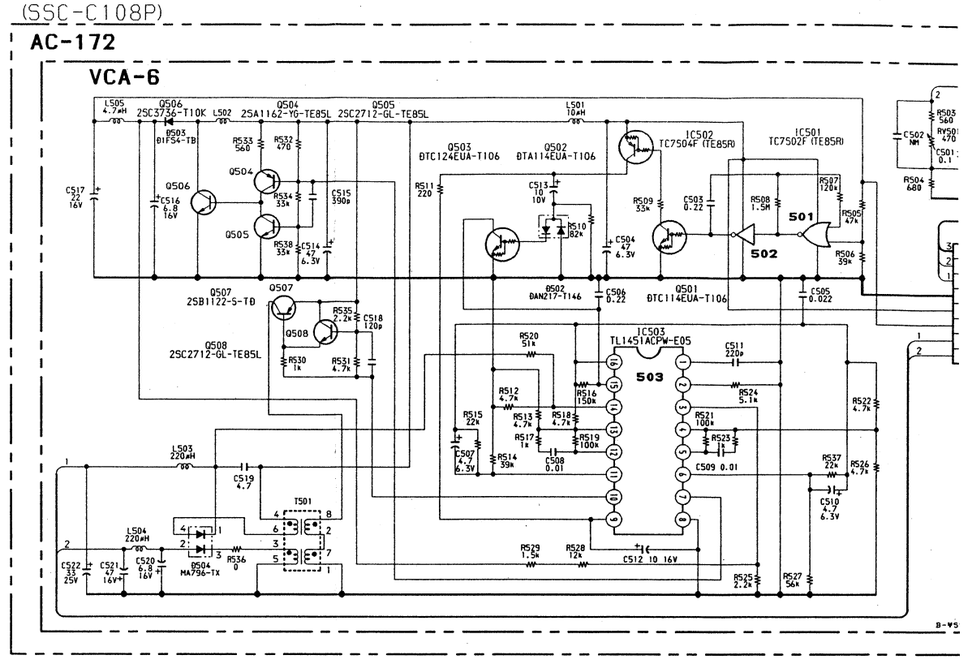

**NOTE**

1. NM:NO MOUNT
2. (N) :NTSC only
3. (P) :PAL only




(SSC-C108P)




(SSC-C104)

**⚠ AC-171**

AC-ØC CONVERTER UNIT

**MB-653**

SECONDARY

PRIMARY

| CN501 8P | | CN402 8P |
|---|---|---|
| GND1 | 1 | GND1 |
| 5V SENS | 2 | 5V SENSE |
| 5V CONT | 3 | 5V CONT |
| GND2 | 4 | GND2 |
| 5V IN | 5 | 5V IN |
| 9V OUT | 6 | 9V OUT |
| 15V OUT | 7 | 15V OUT |
| -9V OUT | 8 | -9V OUT |

FRAME GND

POWER CORD

B-W55CC104/108P-VCA/M

B-W55CC104/108P-AC/M

CN403 6P: GND, 5V, 9V, 15V, -8.5V, V PULSE

CN2 6P: GND, 5V, 9V, 15V, -8.5V, V PULSE

CN203 6P: GND, +5V, +9V, 15V, -8.5V, V PULSE

## CT-168 (2/2)

CN1 2P: H 2, N 1

WI-1, WI-2

TB1 2P: 2 AC24V, 1

C2 0.0022, C3 0.0022

B-W55CC104/108P-CT/M

GND

## CT-168 (1/2)

SW1 ON OFF: OFF AGC, NORM TURBO, OFF BLC, OFF CCD IRIS

| CN204 9P | | CN1 9P |
|---|---|---|
| TURBO AGC | 1 | 1 TURBO AGC |
| AGC | 2 | 2 AGC |
| VIDEO OUT | 3 | 3 VIDEO OUT |
| +5V | 4 | 4 +5V |
| B.L | 5 | 5 B.L |
| CCD IRIS | 6 | 6 CCD IRIS |
| GND | 7 | 7 GND |
| V SHIFT | 8 | 8 V SHIFT |
| IRIS LEVEL | 9 | 9 IRIS LEVEL |

IRIS LEVEL, V SHIFT

CN2 VIDEO OUT

B-W55CC104/108P-FRAME/M

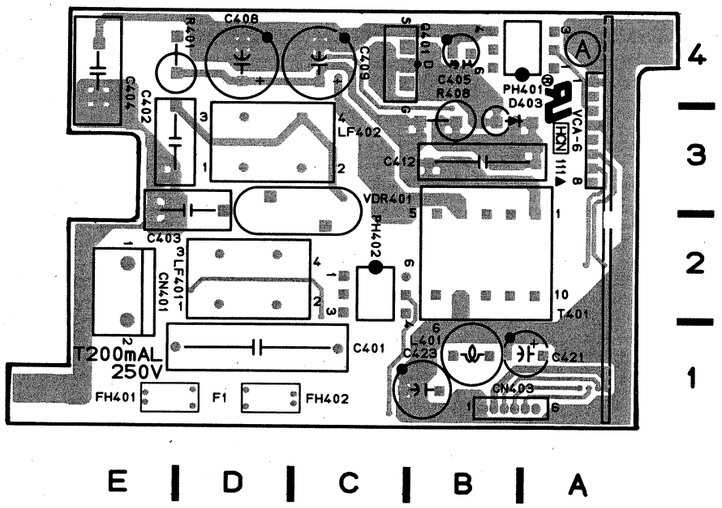
## AC-172 BOARD

① 5V= 2µ

② 5V= 2µ

③ 5V= 2µ

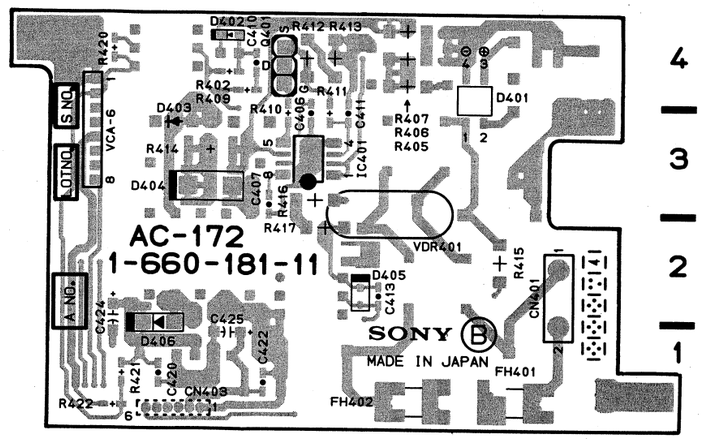
④ 2V= 5µ




AC-172 BOARD
CN401 E-2
CN403 B-1
D403 B-4
Q401 B-4

E | D | C | B | A

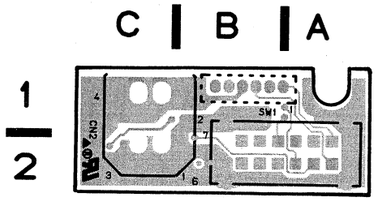
**AC-172 BOARD –A SIDE–**
1-660-181-11




AC-172 BOARD
CN401 E-2
D401 D-4
D402 B-4
D403 B-4
D404 A-3
D405 C-2
D406 A-1
IC401 C-3
Q401 B-4

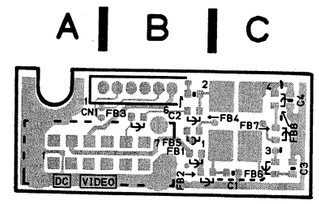
A | B | C | D | E

**AC-172 BOARD –B SIDE–**
1-660-181-11



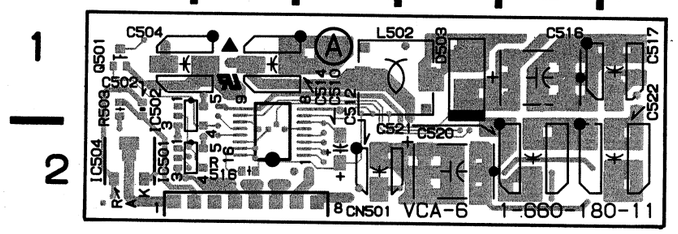

C | B | A

**IR-17 BOARD –A SIDE–**




A | B | C

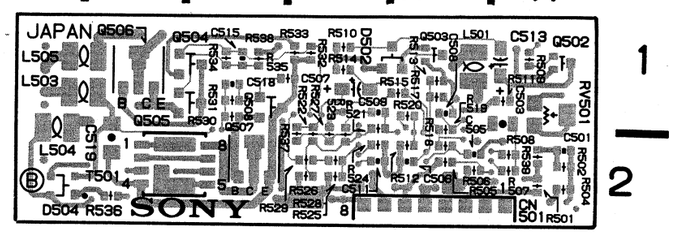
**IR-17 BOARD –B SIDE–**




A | B | C | D | E | F

VCA-6 BOARD
CN501 C-2
D503 D-1
IC501 A-2
IC502 A-1
IC503 B-2
IC504 A-2

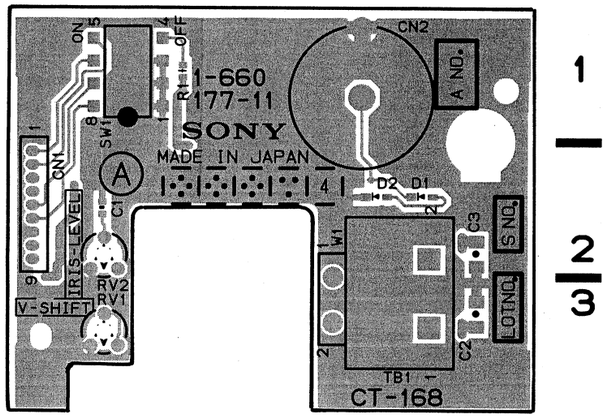
**VCA-6 BOARD –A SIDE–**
1-660-180-11




F | E | D | C | B | A

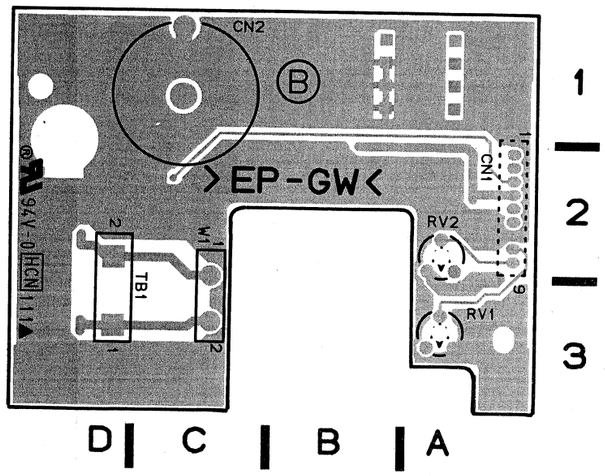
VCA-A BOARD
D502 C-1
D504 F-2
Q502 A-1
Q503 B-1
Q504 D-1
Q505 E-1
Q506 E-1
Q507 D-1
Q508 D-1

**VCA-6 BOARD –B SIDE–**
1-660-180-11



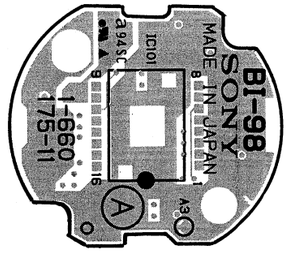

A | B | C | D

**CT-168 BOARD –A SIDE–**
1-660-177-11




D | C | B | A

**CT-168 BOARD –B SIDE–**
1-660-177-11




A | B

**IB-98 BOARD –A SIDE–**
1-660-175-11

A | B

**IB-98 BOARD –B SIDE–**
1-660-175-11

## 5-4. SEMICONDUCTOR PIN ASSIGNMENTS

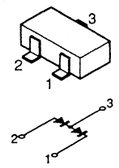
等価回路はICメーカーのData Bookに従いました。

The circuit diagram of each IC is obtained from the IC data book published by the manufacture.


| TYPE | PAGE |
|---|---|
| **Di, Tr** | |
| 1T363 | 5-18 |
| 2SA1162 | 5-18 |
| 2SA1576A | 5-18 |
| 2SB1122 | 5-18 |
| 2SC1623-L5L6 | 5-18 |
| 2SC2712 | 5-18 |
| 2SC3736 | 5-18 |
| 2SK711 | 5-18 |
| 2SK903-M | 5-18 |
| D1FS4 | 5-18 |
| D2FL20 | 5-18 |
| DAN217 | 5-18 |
| DBB08 | 5-18 |
| DTA114EUA | 5-18 |
| DTC114EU | 5-18 |
| DTC144EUA | 5-18 |
| DTZ5.6B | 5-18 |
| MA110 | 5-18 |
| MA141WK | 5-18 |
| MA728 | 5-18 |
| MA796 | 5-18 |
| MA8056 | 5-18 |
| RD22SB | 5-18 |
| RG4C | 5-18 |
| XN1401 | 5-18 |
| XN1501 | 5-18 |
| XN4401 | 5-18 |

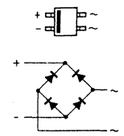
| TYPE | PAGE |
|---|---|
| XN4501 | 5-18 |
| XN4601 | 5-18 |
| TLP732 | 5-18 |
| **IC** | |
| BA10358F | 5-19 |
| CXA1390AR | 5-19 |
| CXA1391R | 5-20 |
| CXA1592R | 5-21 |
| CXD1159Q | 5-22 |
| CXD1267AN | 5-23 |
| CXD2401R | 5-23 |
| CXL1518N | 5-24 |
| FA5304AS | 5-24 |
| ICX054AK | 5-24 |
| ICX055AK | 5-24 |
| MC14577CF | 5-25 |
| NJM431U | 5-25 |
| NJU7022M | 5-25 |
| SC7S02F | 5-25 |
| SC7S04F | 5-25 |
| SC7S32F | 5-25 |
| TC4S66F | 5-25 |
| TC5081AP | 5-26 |
| TC74HC132AF | 5-26 |
| TC7S66F | 5-26 |
| TC7SU04F | 5-25 |
| TL1451ACPW | 5-26 |
| UPC324G2 | 5-26 |


DAN217



DBB08

TOP VIEW (SCALE 2/1)



D1FS4
D2FL20

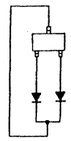
(SCALE 2/1) TOP VIEW

MA110
MA728

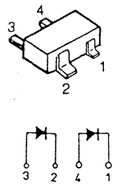
(SCALE 6/1) TOP VIEW

MA141WK

(SCALE 4/1) TOP VIEW



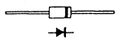
MA796



DTZ5.6B
MA8056
RD22SB

(SCALE 6/1) TOP VIEW

RG4C

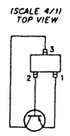


1T363

(SCALE 6/1) TOP VIEW

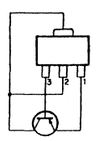
2SA1162
2SA1576A

(SCALE 4/1) TOP VIEW



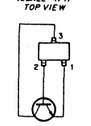
2SB1122

(SCALE 4/1) TOP VIEW



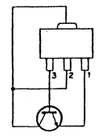
2SC1623-L5L6
2SC2712

(SCALE 4/1) TOP VIEW



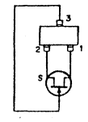
2SC3736

TOP VIEW (SCALE 4/1)

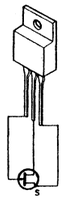


2SK711

TOP VIEW (SCALE 4/1)



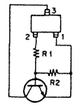
2SK903-M



DTC114EU
DTC144EUA

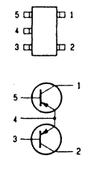
(R1 = 10K, R2 = 10K)

TOP VIEW (SCALE 4/1)



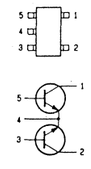
XN1401

(SCALE 6/1) TOP VIEW



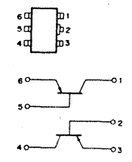
XN1501

(SCALE 6/1) TOP VIEW



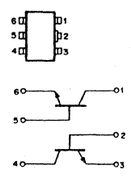
XN4401

(SCALE 6/1) TOP VIEW



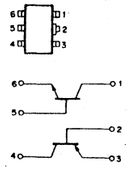
XN4501

(SCALE 6/1) TOP VIEW



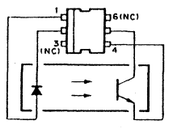
XN4601

(SCALE 6/1) TOP VIEW



TLP732

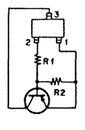
TOP VIEW (SCALE 2/1)



DTA114EUA

(R1 = 10K, R2 = 10K)

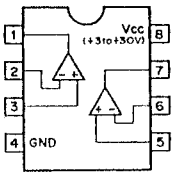
TOP VIEW (SCALE 4/1)



BA10358F(ROHM) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIERS

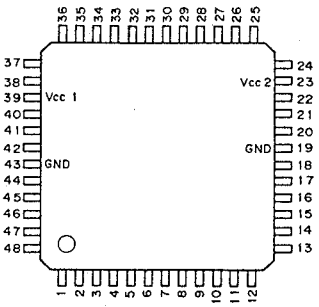
– TOP VIEW –

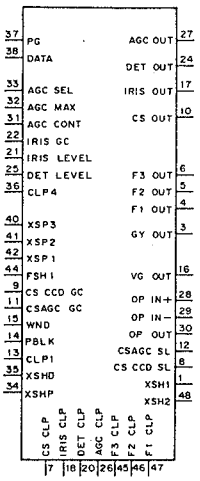



CXA1390AR (SONY)

C-MOS SAMPLE & HOLD AND AGC FOR CCD

– TOP VIEW –



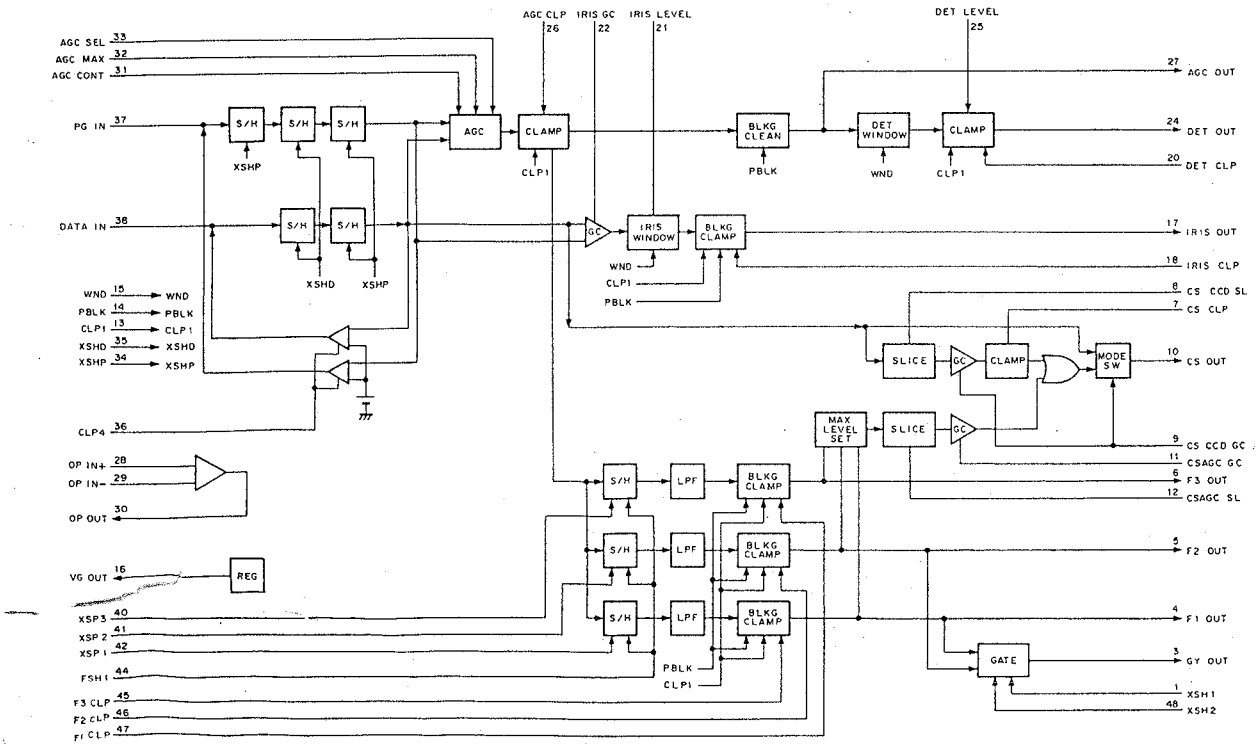

**INPUT**

| | |
|---|---|
| XSH1, XSH2 | ; SAMPLE AND HOLD PULSE INPUTS FOR 1H DELAY LINE |
| XSHP, XSHD | ; SAMPLE AND HOLD PULSE INPUTS FOR CCD IMAGER |
| XSP3, XSP2, XSP1 | ; SAMPLE AND HOLD PULSE INPUTS FOR COLOR SEPARATION |
| CS CLP | ; CLAMP INPUT FOR COLOR SEPARATION |
| IRIS CLP | ; CLAMP INPUT FOR IRIS CONT |
| DET CLP | ; CLAMP INPUT FOR SIGNAL DETECT |
| AGC CLP | ; CLAMP INPUT FOR AGC |
| F3/F2/F1 CLP | ; CLAMP INPUTS FOR F1, F2 AND F3 |
| CS CCD SL | ; HIGH LUMINANCE DET LEVEL ADJ FOR INPUT SIGNAL |
| CS CCD GC | ; HIGH LUMINANCE GAIN ADJ FOR INPUT SIGNAL |
| CSAGC GC | ; HIGH LUMINANCE DET LEVEL ADJ FOR AFTER AGC |
| CSAGC SL | ; HIGH LUMINANCE DET LEVEL ADJ FOR INPUT SIGNAL |
| IRIS LEVEL | ; WEIGHT ADJ INPUT FOR DET OUTPUT |
| IRIS GC | ; GAIN CONT INPUT FOR IRIS OUT |
| DET LEVEL | ; WEIGHT ADJ INPUT FOR DET OUTPUT |
| AGC CONT | ; AGC AMPLIFIER GAIN CONT INPUT |
| AGC MAX | ; AGC AMPLIFIER MAX GAIN CONT INPUT |
| CLP1 | ; CLAMP PULSE 1 INPUT |
| PBLK | ; PRE BLKG PULSE INPUT |
| WND | ; WINDOW PULSE INPUT |
| CLP4 | ; CLAMP PULSE 4 INPUT |
| OP IN + | ; NON-INVERTING INPUT OF OPERATIONAL AMPLIFIER |
| OP IN – | ; INVERTING INPUT OF OPERATIONAL AMPLIFIER |
| AGC SEL | ; GAIN SELECT FOR AGC AMPLIFIER |
| PG IN | ; CCD SIGNAL INPUT |
| DATA IN | ; CCD SIGNAL INPUT |
| FSHI | ; LOCK SPEED ADJ INPUT FOR COLOR SEPARATION S/H |

**OUTPUT**

| | |
|---|---|
| GY OUT | ; GY OUTPUT |
| F1, F2, F3, OUT | ; F1, F2 AND F3 OUTPUTS |
| AGC OUT | ; AGC OUTPUT |
| CS OUT | ; COLOR SEPARATION OUTPUT |
| IRIS OUT | ; IRIS OUTPUT |
| DET OUT | ; DET OUTPUT |
| VG OUT | ; REGULATED DC OUTPUT |
| OP OUT | ; OPERATIONAL AMPLIFIER OUTPUT |

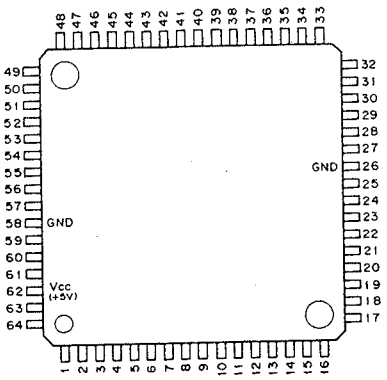
| PIN No. | I/O | SYMBOL | PIN No. | I/O | SYMBOL | PIN No. | I/O | SYMBOL | PIN No. | I/O | SYMBOL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I | XSH1 | 13 | I | CLP 1 | 25 | I | DET LEVEL | 37 | I | PG IN |
| 2 | O | DC OUT | 14 | I | PBLK | 26 | I | AGC CLP | 38 | I | DATA IN |
| 3 | O | GY OUT | 15 | I | WND | 27 | O | AGC OUT | 39 | – | Vcc1 |
| 4 | O | F1 OUT | 16 | O | VG OUT | 28 | I | OP IN + | 40 | I | XSP3 |
| 5 | O | F2 OUT | 17 | O | IRIS OUT | 29 | I | OP IN – | 41 | I | XSP2 |
| 6 | O | F3 OUT | 18 | I | IRIS CLP | 30 | O | OP OUT | 42 | I | XSP1 |
| 7 | I | CS CLP | 19 | – | GND | 31 | I | AGC CONT | 43 | – | GND |
| 8 | I | CS CCD SL | 20 | I | DET CLP | 32 | I | AGC MAX | 44 | I | FSH1 |
| 9 | I | CS CCD GC | 21 | I | IRIS LEVEL | 33 | I | AGC SEL | 45 | I | F3 CLP |
| 10 | O | CS OUT | 22 | I | IRIS GC | 34 | I | XSHP | 46 | I | F2 CLP |
| 11 | I | CS AGC GC | 23 | – | Vcc2 | 35 | I | XSHD | 47 | I | F1 CLP |
| 12 | I | CS AGC SL | 24 | O | DET OUT | 36 | I | CLP4 | 48 | I | XSH2 |

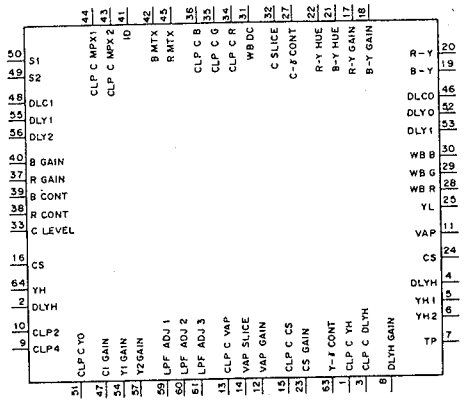


CXA1391R (SONY) FLAT PACKAGE

PROCESSING IC FOR COMPLEMENTARY COLOR MOSAIC CCD CAMERA

– TOP VIEW –




(Vcc = + 5V)

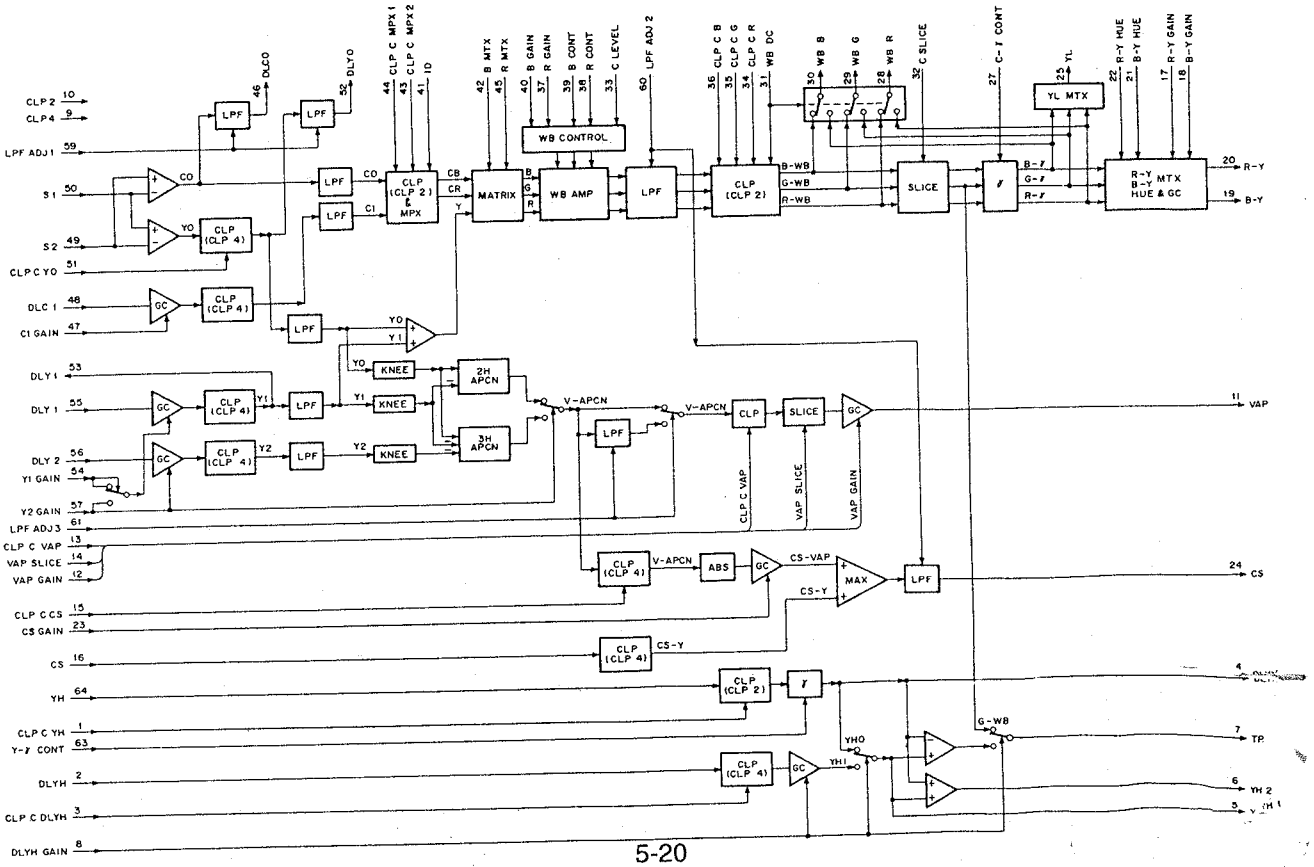
| PIN No. | I/O | SYMBOL | PIN No. | I/O | SYMBOL | PIN No. | I/O | SYMBOL | PIN No. | I/O | SYMBOL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I | CLP C YH | 17 | I | R-Y GAIN | 33 | I | C LEVEL | 49 | I | S2 |
| 2 | I | DLYH | 18 | I | B-Y GAIN | 34 | I | CLP C R | 50 | I | S1 |
| 3 | I | CLP C DLYH | 19 | O | B-Y | 35 | I | CLP C G | 51 | I | CLP C YO |
| 4 | O | DLYH | 20 | O | R-Y | 36 | I | CLP C B | 52 | O | DLYO |
| 5 | O | YH1 | 21 | I | B-Y HUE | 37 | I | R GAIN | 53 | O | DLY1 |
| 6 | O | YH2 | 22 | I | R-Y HUE | 38 | I | R CONT | 54 | I | Y1 GAIN |
| 7 | O | TP | 23 | I | CS GAIN | 39 | I | B CONT | 55 | I | DLY1 |
| 8 | I | DLYH GAIN | 24 | O | CS | 40 | I | B GAIN | 56 | I | DLY2 |
| 9 | I | CLP4 | 25 | O | YL | 41 | I | ID | 57 | I | Y2 GAIN |
| 10 | I | CLP2 | 26 | – | GND | 42 | I | B MTX | 58 | – | GND |
| 11 | O | VAP | 27 | I | C-γ CONT | 43 | I | CLP C MPX2 | 59 | I | LPF ADJ 1 |
| 12 | I | VAP GAIN | 28 | O | WB R | 44 | I | CLP C MPX1 | 60 | I | LPF ADJ 2 |
| 13 | I | CLP C VAP | 29 | O | WB G | 45 | I | R MTX | 61 | I | LPF ADJ 3 |
| 14 | I | VAP SLICE | 30 | O | WB B | 46 | O | DLCO | 62 | – | Vcc |
| 15 | I | CLP C CS | 31 | O | WB DC | 47 | I | C1 GAIN | 63 | I | Y-γ CONT |
| 16 | I | CS | 32 | I | C SLICE | 48 | I | DLC1 | 64 | I | YH |

**INPUT**

| | |
|---|---|
| B, R CONT | ; B, RCH WB AMPLIFIER GAIN CONTROL |
| B, R GAIN | ; B, RCH WB AMPLIFIER GAIN CONTROL (PRE-WB) |
| B, R MTX | ; B, R SIGNAL OPERATIONS MTX COEFFICIENT ADJ. |
| C LEVEL | ; CHROMA (R,G,B) GAIN CONTROL |
| C SLICE | ; CHROMA (R,G,B) SIGNALS DARK SLICE LEVEL ADJ. |
| C-γ CONT | ; CHROMA (R,G,B) γ CURVE ADJ. |
| C1 GAIN | ; DLC1 SIGNAL GAIN CONTROL |
| CLP C R,G,B | ; CAPACITOR CONNECTING FOR R,G,B WB AMPLIFIER CLAMP |
| CLP C CS | ; CAPACITOR CONNECTING FOR CS CLAMP |
| CLP C DLYH | ; CAPACITOR CONNECTING FOR DLYH CLAMP |
| CLP C MPX1, 2 | ; CAPACITOR CONNECTING FOR MPX CLAMP |
| CLP C VAP | ; CAPACITOR CONNECTING FOR VAP CLAMP |
| CLP C YO | ; CAPACITOR CONNECTING FOR YO CLAMP |
| CLP C YH | ; CAPACITOR CONNECTING FOR YH CLAMP |
| CLP2 | ; OPB CLAMP |
| CLP4 | ; BLK CLAMP |
| CS IN | ; AGC CS SIGNAL |
| CS GAIN | ; V-APCN CS SIGNAL GAIN CONTROL |
| DLC1, Y1, Y2 | ; DLC1, Y1, Y2 SIGNAL |
| DLYH | ; DLYH SIGNAL |
| DLYH GAIN | ; DLYH SIGNAL GAIN CONTROL |
| ID | ; COLOR DISCRIMINATION PULSE |
| LPF ADJ 1 | ; DETERMINES THE CHARACTERISTICS OF THE LPF FOR 1H DL |
| LPF ADJ 2 | ; DETERMINES THE CHARACTERISTICS OF THE CHROMA LPF (R,G,B,CS ) |
| LPF ADJ 3 | ; DETERMINES THE CHARACTERISTICS OF THE LPF FOR V-APCN |
| R-Y, B-Y GAIN | ; R-Y, B-Y, SIGNAL OUTPUT LEVEL ADJ. |
| R-Y, B-Y HUE | ; R-Y, B-Y HUE CONTROL |
| S1, 2 | ; S1, 2 SIGNAL |
| VAP GAIN | ; V-AFCN SIGNAL OUTPUT LEVEL ADJ. |
| VAP SLICE | ; V-APCN SIGNAL DARK SLICE VOLUME ADJ. |
| Y-γ CONT | ; YH γ CURVE ADJ. |
| Y1, 2 GAIN | ; DLY1, 2 SIGNAL GAIN CONTROL |
| YH | ; YH SIGNAL |

**OUTPUT**

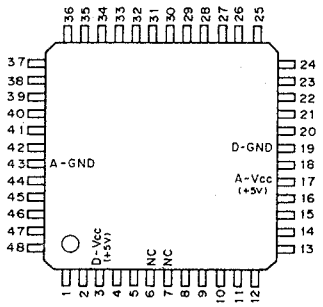
| | |
|---|---|
| CS OUT | ; CS SIGNAL |
| DLCO | ; DLCO SIGNAL |
| DLCO, 1 | ; DLCO, 1 SIGNAL |
| DLYO,1 | ; DLYO, 1 SIGNAL |
| DLYH | ; DLYH SIGNAL |
| R-Y, B-Y | ; R-Y, B-Y SIGNAL |
| TP | ; ADJUSTING PIN |
| VAP | ; V-APCN SIGNAL |
| WB R,G,B | ; R,G,B SIGNAL |
| WB DC | ; AUTO WB DC OUTPUT OR WB R,G,B TURN TO γ MODE |
| YH1, 2 | ; YH1, 2 SIGNAL |
| YL | ; YL SIGNAL |



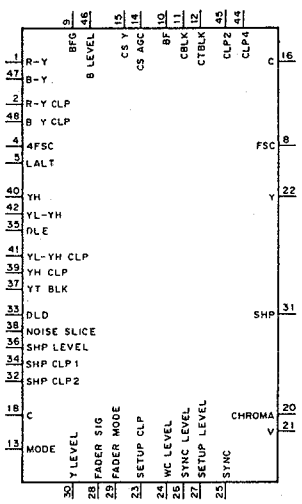
CXA1592R (SONY) FLAT PACKAGE

ENCODER FOR CCD COLOR CAMERA

– TOP VIEW –




| PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL | PIN No. | I/O | SIGNAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I | R-Y | 13 | I | MODE | 25 | I | SYNC | 37 | I | YTBLK |
| 2 | I | R-Y CLP | 14 | I | CS AGC | 26 | I | SYNC LEVEL | 38 | I | NOISE SLICE |
| 3 | – | D-Vcc(+5V) | 15 | I | CSY | 27 | I | SETUP LEVEL | 39 | I | YH CLP |
| 4 | I | 4FSC | 16 | O | C | 28 | I | FADER SIG | 40 | I | YH |
| 5 | I | LALT | 17 | – | A-Vcc(+5V) | 29 | I | FADER MODE | 41 | I | YL-YH CLP |
| 6 | – | NC | 18 | I | C | 30 | I | Y LEVEL | 42 | I | YL-YH |
| 7 | – | NC | 19 | – | D-GND | 31 | O | SHP | 43 | – | A-GND |
| 8 | O | FSC | 20 | O | CHROMA | 32 | I | SHP CLP2 | 44 | I | CLP4 |
| 9 | I | BFG | 21 | O | V | 33 | I | DLD | 45 | I | CLP2 |
| 10 | I | BF | 22 | O | Y | 34 | I | SHP CLP1 | 46 | I | B LEVEL |
| 11 | I | CBLK | 23 | I | SETUP CLP | 35 | I | DLE | 47 | I | B-Y |
| 12 | I | CTBLK | 24 | I | WC LEVEL | 36 | I | SHP LEVEL | 48 | I | B-Y CLP |

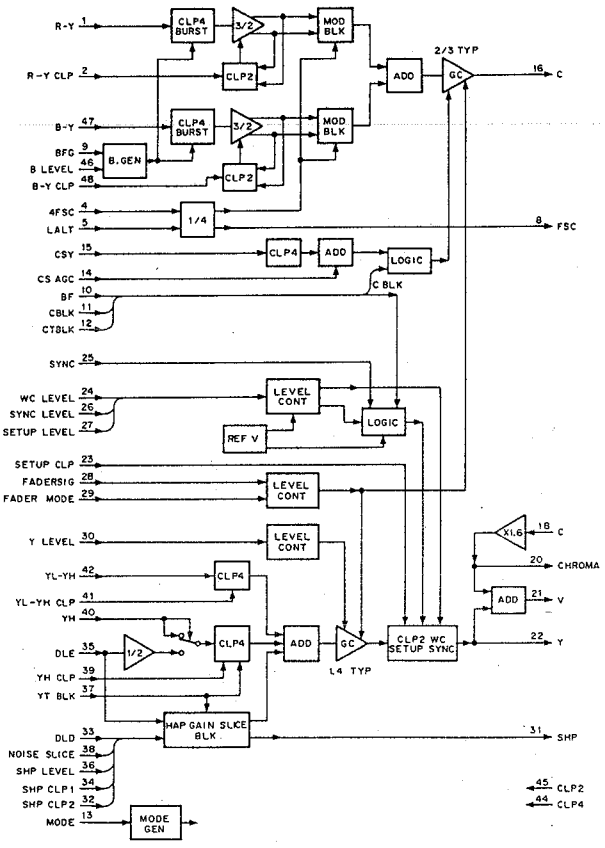



**INPUT**

| | |
|---|---|
| 4FSC | ; 4FSC USED TO MAKE UP THE SUB CARRIER |
| B LEVEL | ; CONTROLS THE BURST LEVEL |
| BF | ; BURST FLAG PULSE |
| BFG | ; INSERTS PULSE SLIGHT LARGER THAN BF ON BOTH ENDS |
| C | ; INPUT FOR CHROMA SIGNAL PASSED THROUGH BPF |
| CBLK | ; COMPOSITE BLANKING PULSE |
| CLP2, 4 | ; CLAMP2, 4 PULSE INPUT |
| CS AGC | ; SUPPRESS CHROMA SIGNAL AT THE AGC GAIN CONTROL SIGNAL |
| CSY | ; SUPPRESS CHROMA SIGNAL AT THE Y SIGNAL |
| CTBLK | ; CHROMA TITLER PULSE |
| DLD | ; CONNECTS THE DELAY LINE DRIVE SIDE OF THE APERTURE SIGNAL |
| DLE | ; CONNECTS THE DELAY LINE END SIDE OF THE APERTURE SIGNAL |
| FADER MODE | ; BLACK FADER AND WHITE FADER MODE SELECT |
| FADER SIG | ; CONTROLS THE SIGNAL SUPPRESS LEVEL DURING BLACK FADER. CONTROLS THE SIGNAL SUPPRESS LEVEL DURING WHITE FADER AND AT THE SAME TIME CONTROLS THE SET UP LEVEL |
| LALT | ; INPUT FOR LINE ALTERNATE SIGNAL DURING PAL MODE |
| MODE | ; SELECTS NTSC, PAL OR NTSC × 2, PAL × 2 MODES |
| NOISE SLICE | ; CONTROLS THE SLICE LEVEL OF THE APERTURE SIGNAL |
| R-Y, B-Y | ; R-Y, B-Y SIGNAL |
| R-Y, B-Y CLP | ; CONNECTING THE CAPACITOR FOR R-Y, B-Y MODULATOR CLAMP |
| SETUP CLP | ; CONNECTING FOR THE WHITE CLIP CLAMP CAPACITOR |
| SETUP LEVEL | ; SET UP LEVEL CONTROL |
| SHP CLP1, 2 | ; CONNECTS THE CLAMP CAPACITOR USED FOR THE SLICE OF THE APERTURE SIGNAL |
| SHP LEVEL | ; CONTROL OF THE APERTURE SIGNAL LEVEL |
| SYNC | ; SYNC PULSE |
| SYNC LEVEL | ; SYNC LEVEL CONTROL |
| WC LEVEL | ; WHITE CLIP LEVEL CONTROL |
| Y LEVEL | ; Y SIGNAL LEVEL CONTROL |
| YH | ; YH SIGNAL |
| YH CLP | ; CONNECTS THE CAPACITOR FOR YH INPUT CLAMP |
| YL-YH | ; V APERTURE SIGNALS. TITLER SIGNALS AND YL-YH SIGNALS |
| YL-YH CLP | ; CONNECTS THE CAPACITOR FOR YL-YH INPUT CLAMP |
| YTBLK | ; Y TITLER PULSE |

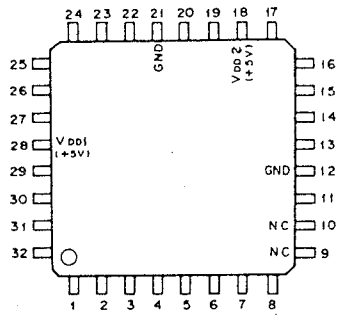
**OUTPUT**

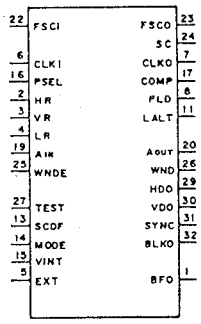
| | |
|---|---|
| C | ; CHROMA SIGNAL OUTPUT |
| CHROMA | ; CHROMA SIGNAL OUTPUT WHEN USED FOR Y/C SEPARATION OUTPUT |
| FSC | ; OUTPUTS A SUB CARRIER WITH THE SAME PHASE AS B-Y |
| SHP | ; APERTURE SIGNAL |
| V | ; COMPOSITE VIDEO SIGNAL |
| Y | ; Y SIGNAL OUTPUT WHEN USED FOR Y/C SEPARATION OUTPUT |



CXD1159Q (SONY)

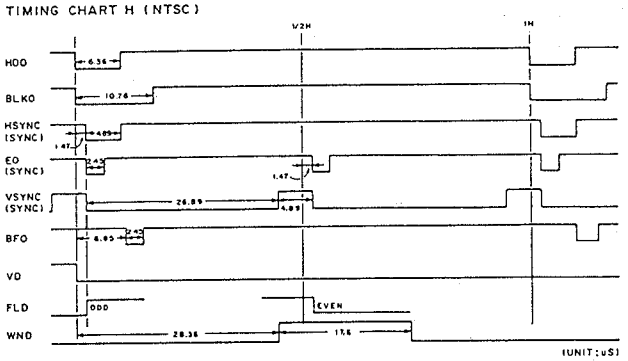
C-MOS SYNC GENERATOR
– TOP VIEW –



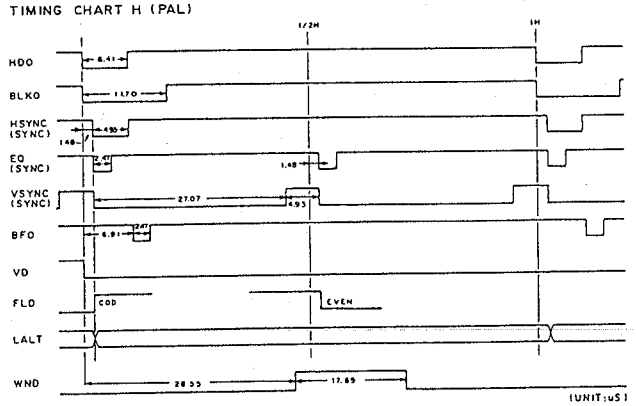



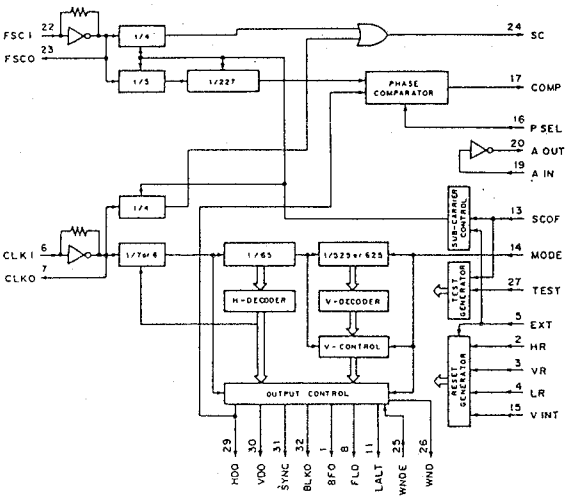

| PIN NO. | I/O | SIGNAL | PIN NO. | I/O | SIGNAL | PIN NO. | I/O | SIGNAL | PIN NO. | I/O | SIGNAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | O | BFO | 9 | – | NC | 17 | O | COMP | 25 | I | WNDE |
| 2 | I | HR | 10 | – | NC | 18 | – | VDD2(+5V) | 26 | O | WND |
| 3 | I | VR | 11 | O | LALT | 19 | I | AIN | 27 | I | TEST |
| 4 | I | LR | 12 | – | GND | 20 | O | AOUT | 28 | – | VDD1(+5V) |
| 5 | I | EXT | 13 | I | SCOF | 21 | – | GND | 29 | O | HDO |
| 6 | I | CLKI | 14 | I | MODE | 22 | I | FSCI | 30 | O | VDO |
| 7 | O | CLKO | 15 | I | VINT | 23 | O | FSCO | 31 | O | SYNC |
| 8 | O | FLD | 16 | I | PSEL | 24 | O | SC | 32 | O | BLKO |

TIMING CHART H (NTSC)

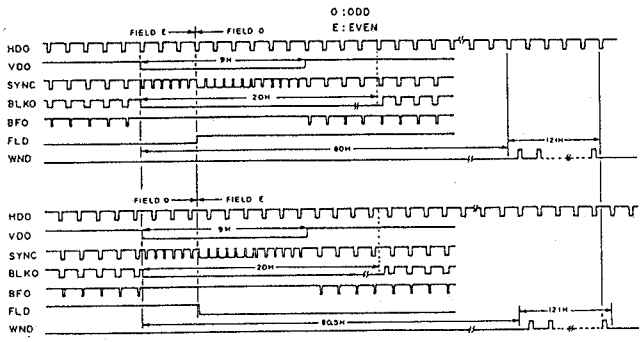



TIMING CHART H (PAL)

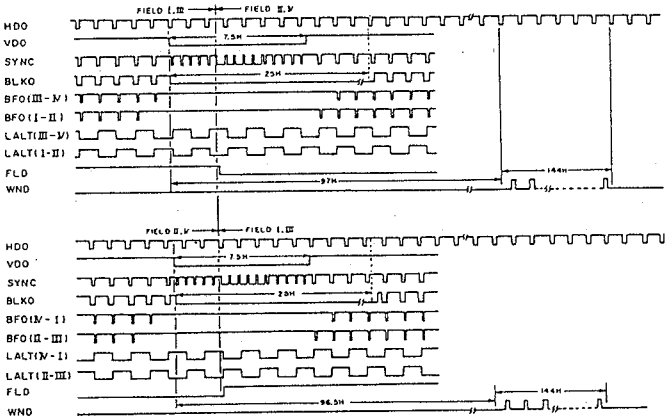



TIMING CHART V (NTSC)




TIMING CHART V (PAL)




INPUT

| | | |
|---|---|---|
| AIN | : | FILTER INVERTER INPUT |
| CLKI | : | CLOCK INPUT (NTSC ; 14.31818MHz /PAL ; 14.1875MHz) |
| EXT | : | INT/EXT (L ; INT) |
| FSCI | : | 4FSC CLOCK INPUT |
| HR | : | H RESET |
| LR | : | LALT RESET |
| MODE | : | NTSC/PAL (L ; NTSC) |
| PSEL | : | POLARITY SELECT FOR PHASE COMP |
| SCOF | : | SUBCARRIER OFF (L ; OFF) |
| TEST | : | TEST INPUT |
| VINT | : | INITIALIZE |
| VR | : | V RESET |
| WNDE | : | WINDOW ENABLE |

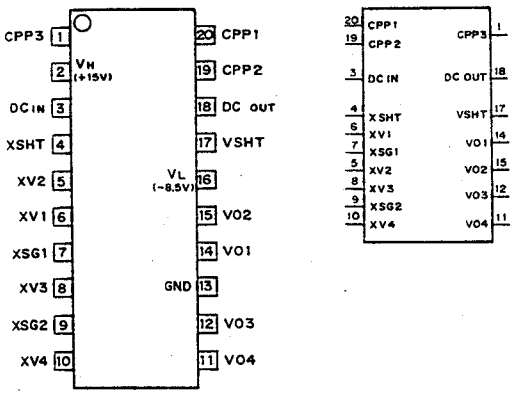
OUTPUT

| | | |
|---|---|---|
| AOUT | : | FILTER INVERTER OUTPUT |
| BFO | : | BURST FLAG PULSE |
| BLKO | : | COMPOSITE BLANKING PULSE |
| CLKO | : | CLOCK OUTPUT |
| COMP | : | PHASE COMP |
| FLD | : | FIELD PULSE |
| FSCO | : | 4FSC CLOCK OUTPUT |
| HDO | : | H DRIVE PULSE |
| LALT | : | LINE ALTERNATE PULSE |
| SC | : | SUBCARRIER |
| SYNC | : | COMPOSITE SYNC PULSE |
| VDO | : | V DRIVE PULSE |
| WND | : | WINDOW |

CXD1267AN (SONY) FLAT PACKAGE

C-MOS VERTICAL CLOCK DRIVER FOR CCD

– TOP VIEW –

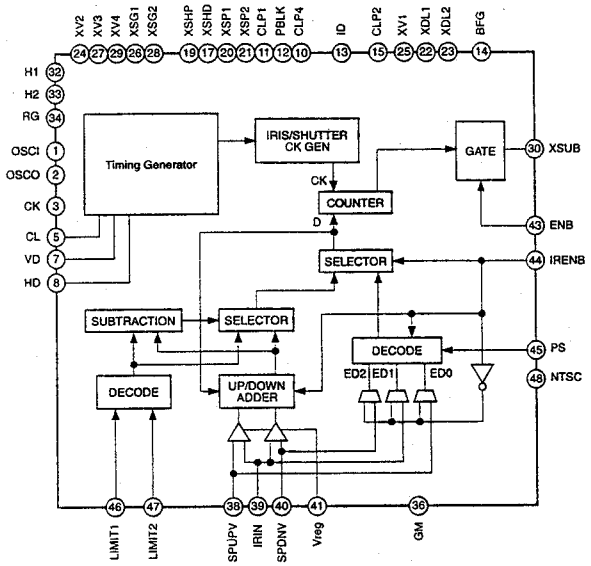



**INPUT**

DCIN : OPERATIONAL AMPLIFIRE INPUT
XSG1, XSG2: SENSOR GATE PULSE INPUT
XSHT : SAMPLE AND HOLD PULSE INPUT
XV1 – XV4 : VERTICAL REGISTER TRANSMISSION CLOCK INPUT

**OUTPUT**

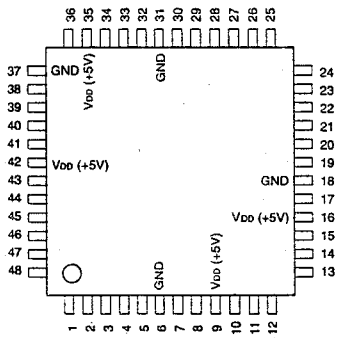
CPP3 : CHARGE PUMP
DCOUT : OPERATIONAL AMPLIFIRE OUTPUT
VSHT : SAMPLE AND HOLD PULSE OUTPUT
V01 – V04 : VERTICAL REGISTER TRANSMISSION CLOCK OUTPUT




CXD2401R (SONY)

ELECTRONIC IRIS CONTROL IC

—TOP VIEW—




(VDD=+5V)

| Pin No. | I/O | SIGNAL | Pin No. | I/O | SIGNAL | Pin No. | I/O | SIGNAL | Pin No. | I/O | SIGNAL |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | I | OSCI | 13 | O | ID | 25 | O | XV1 | 37 | – | GND |
| 2 | O | OSCO | 14 | O | BFG | 26 | O | XSG1 | 38 | I | SPUPV |
| 3 | I | CK | 15 | O | CLP2 | 27 | O | XV3 | 39 | I | IRIN |
| 4 | I | TEST | 16 | – | VDD | 28 | O | XSG2 | 40 | I | SPDNV |
| 5 | O | CL | 17 | O | XSHD | 29 | O | XV4 | 41 | – | Vreg |
| 6 | – | GND | 18 | – | GND | 30 | O | XSUB | 42 | – | VDD |
| 7 | I | VD | 19 | O | XSHP | 31 | – | GND | 43 | I | ENB |
| 8 | I | HD | 20 | O | XSP1 | 32 | O | H1 | 44 | I | IRENB |
| 9 | – | VDD | 21 | O | XSP2 | 33 | O | H2 | 45 | I | PS |
| 10 | O | CLP4 | 22 | O | XDL1 | 34 | O | RG | 46 | I | LIMIT1 |
| 11 | O | CLP1 | 23 | O | XDL2 | 35 | – | VDD | 47 | I | LIMIT2 |
| 12 | O | PBLK | 24 | O | XV2 | 36 | I | GM | 48 | I | NTSC |

INPUT

CK ;CLOCK
ENB ;ELECTRONIC SHUTTER PULSE GENERATION/STOP SWITCH CONTROL
HD ;HORIZONTAL SYNCHRONIZING SIGNAL
IRENB ;ELECTRONIC IRIS/SHUTTER SWITCH CONTROL
IRIN ;ELECTRONIC IRIS MODE: IRIS SIGNAL
ELECTRONIC SHUTTER SERIAL MODE: CLOCK
LIMIT1,2 ;SHUTTER SPEED LIMIT VALUE SELECT
NTSC ;NTSC/PAL SWITCH CONTROL
OSCI ;OSCILLATION INVERTER
PS ;ELECTRONIC SHUTTER SPEED DATA PARALLEL/SERIAL SWITCH CONTROL
SPDNV ;ELECTRONIC IRIS MODE: SHUTTER SPEED DOWN REFERENCE VOLTAGE
ELECTRONIC SHUTTER SERIAL MODE: DATA
SPUPV ;ELECTRONIC IRIS MODE: SHUTTER SPEED UP REFERENCE VOLTAGE
ELECTRONIC SHUTTER SERIAL MODE: STROBE
TEST ;TEST
VD ;VERTICAL SYNCHRONIZING SIGNAL

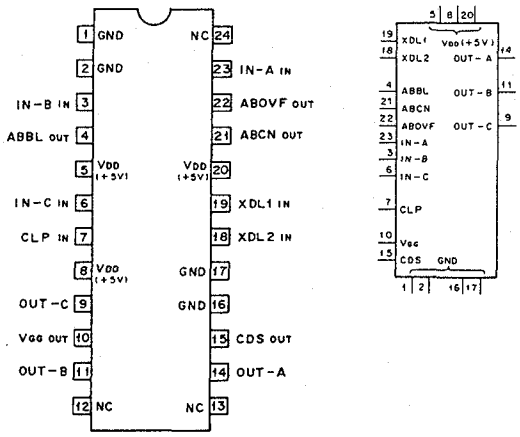
OUTPUT

BFG ;BURST FLAG GATE PULSE
CL ;CK/2 CLOCK
CLP1,2,4 ;CLAMP PULSE
H1,2 ;CCD HORIZONTAL CLOCK
ID ;LINE DETECT
OSCO ;OSCILLATION INVERTER
PBLK ;BLANKING CLEANING PULSE
RG ;CCD RESET GATE PULSE
XDL1,2 ;CLOCK (DELAY LINE)
XSG1,2 ;CLOCK (CCD SENSOR READ OUT)
XSHD ;SAMPLE/HOLD PULSE (DATA LEVEL)
XSHP ;SAMPLE/HOLD PULSE (PRE-CHARGE LEVEL)
XSP1,2 ;SAMPLE/HOLD PULSE
XSUB ;CLOCK (CCD ELECTRON SHUTTER)
XV1,2,3,4 ;CCD VERTICAL CLOCK

CXL1518N (SONY) FLAT PACKAGE

C-MOS CCD SIGNAL PROCESSOR

– TOP VIEW –




**INPUT**

| | |
|---|---|
| CLP | ; CLAMP PULSE INPUT |
| IN – A | ; SIGNAL INPUT A CHANNEL (C) |
| IN – B | ; SIGNAL INPUT B CHANNEL (Y) |
| IN – C | ; SIGNAL INPUT C CHANNEL (Y) |
| XDL1, 2 | ; CLOCK PULSE INPUT 1, 2 |

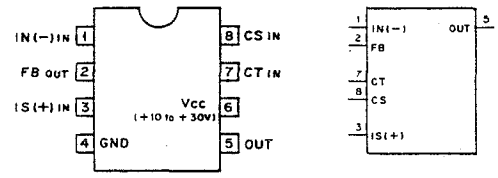
**OUTPUT**

| | |
|---|---|
| ABBL | ; AUTOBIAS DC OUTPUT FOR Y SIGNAL |
| ABCN | ; AUTOBIAS DC OUTPUT FOR C SIGNAL |
| ABOVF | ; AUTOBIAS DC OUTPUT |
| CDS | ; DC OUTPUT FOR CDS |
| OUT – A, B, C | ; SIGNAL OUTPUT A, B, C CHANNEL |
| VGG | ; OUTPUT CIRCUIT BIAS DC OUTPUT |

FA5304AS (FUJI ELECT) FLAT PACKAGE

*PWM SWITCHING MODE POWER SUPPLY CONTROLLER*

– TOP VIEW –

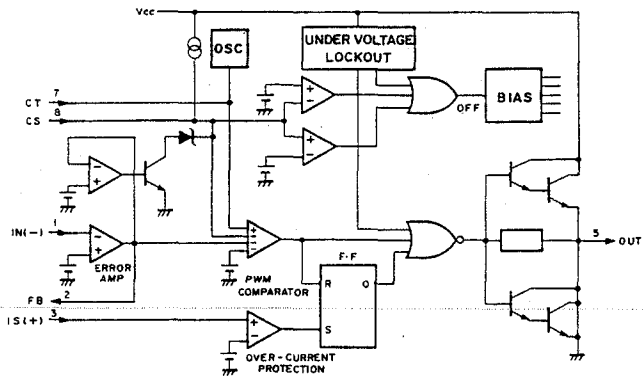


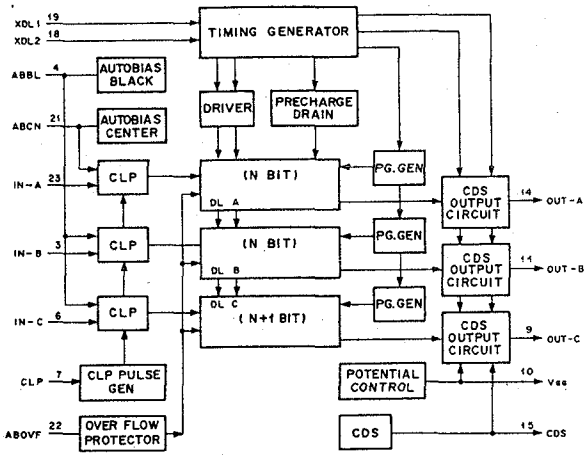

**INPUT**

| | |
|---|---|
| CS | ; SOFT START CAPACITOR CONNECTION |
| CT | ; OSCILLATION FREQUENCY CONTROL CAPACITOR CONNECTION |
| IN (–) | ; FEEDBACK/PWM INPUT |
| IS (+) | ; SOURCE CURRENT INPUT AT OVER-CURRENT DETECTION |

**OUTPUT**

| | |
|---|---|
| *FB* | ; *FEEDBACK OUTPUT* |
| OUT | ; DRIVE OUTPUT |



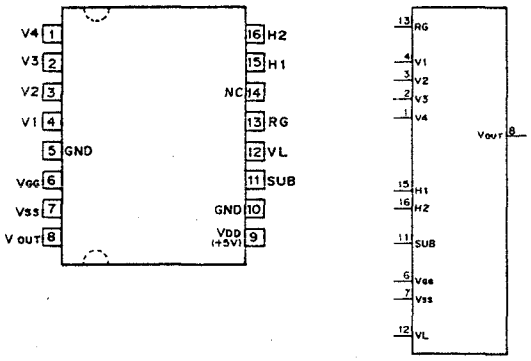




ICX054AK (SONY) (NTSC,COLOR)

ICX055AK (SONY) (PAL,COLOR)

1/3-INCH CCD IMAGE BLOCK

– *TOP VIEW* –

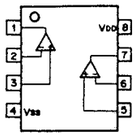



| | |
|---|---|
| H1, H2 | ; HORIZONTAL REGISTER TRANSFER CLOCK |
| RG | ; RESET GATE CLOCK |
| SUB | ; *OVERFLOW DRAIN* |
| VGG | ; OUTPUT AMP GATE BIAS |
| VL | ; PROTECTION TRANSISTOR BIAS |
| VSS | ; OUTPUT AMP SOURCE |
| V1 – V4 | ; VERTICAL REGISTER TRANSFER CLOCK |
| VOUT | ; SIGNAL OUTPUT |

MC14577CF (MOTOROLA) FLAT PACKAGE

C-MOS DUAL VIDEO AMPLIFIERS

– TOP VIEW –

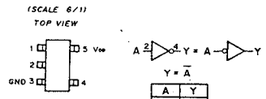



|VDD + | VSS | = +5V to +12V

SC7S04F (MOTOROLA) CHIP PACKAGE

TC7SU04F (TOSHIBA) CHIP PACKAGE

C-MOS INVERTER




| A | Y |
|---|---|
| 0 | 1 |
| 1 | 0 |

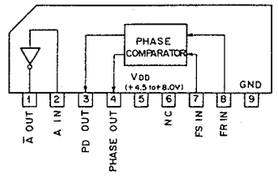
0 ; LOW LEVEL
1 ; HIGH LEVEL

| TYPE | VDD |
|---|---|
| 7S04F<br>7SU04F | +2 to +6V |
| 4S69F<br>4SU69F | +3 to +18V |

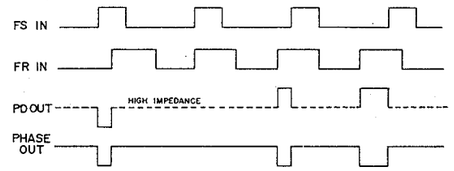
TC5081AP (TOSHIBA)

C-MOS PHASE COMPARATOR

– SIDE VIEW –



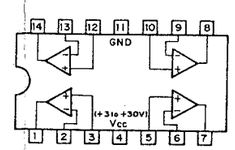

PHASE COMPARATOR TIMING CHART




UPC324G2 (NEC) FLAT PACKAGE

QUAD OPERATIOAL AMPLIFIERS

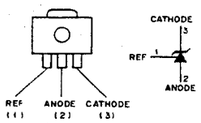
– TOP VIEW –




NJM431U (JRC)

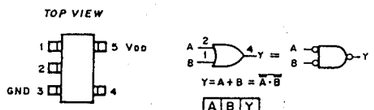
ADJUSTABLE PRECISION SHUNT REGULATOR

– FRONT VIEW –




SC7S32F (MOTOROLA) CHIP PACKAGE

C-MOS 2-INPUT OR GATE




| A | B | Y |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

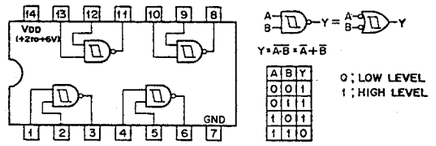
0 ; LOW LEVEL
1 ; HIGH LEVEL

| TYPE | VDD |
|---|---|
| 7S32F<br>7S32FU | +2 to +6V |
| 4S71F | +3 to +18V |
| 7SH32FU | −2 to +5.5V |

TC74HC132AF (TOSHIBA) FLAT PACKAGE

C-MOS 2-INPUT NAND SCHMITT TRIGGER

– TOP VIEW –




| A | B | Y |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

0 ; LOW LEVEL
1 ; HIGH LEVEL

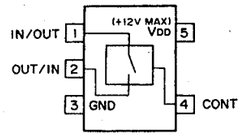
NOTE :

| TYPE | VDD |
|---|---|
| HC | +2 to +6V |
| VHC | +2 to +5.5V |

TC7S66F (TOSHIBA)

C-MOS ANALOG SWITCH

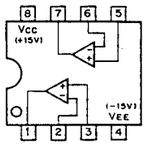
– TOP VIEW –




NJU7022M (JRC) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIER

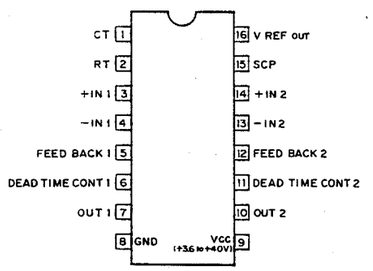
– TOP VIEW –

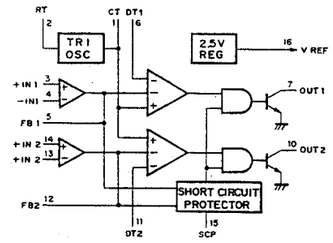



TL1451ACPW (TI) FLAT PACKAGE (SMALL)

DUAL PWM POWER CONTROLLER

– TOP VIEW –

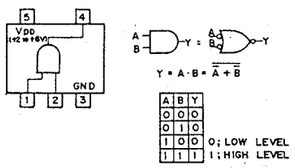



SC7S02F (MOTOROLA) CHIP PACKAGE

C-MOS 2-INPUT NOR GATE

– TOP VIEW –



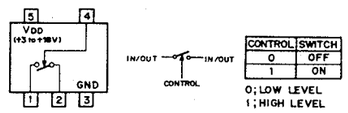

| A | B | Y |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC4S66F (TOSHIBA) CHIP PACKAGE

C-MOS BILATERAL ANALOG SWITCH

– TOP VIEW –




| CONTROL | SWITCH |
|---|---|
| 0 | OFF |
| 1 | ON |

0 ; LOW LEVEL
1 ; HIGH LEVEL

# SECTION 6
# REPAIR PARTS

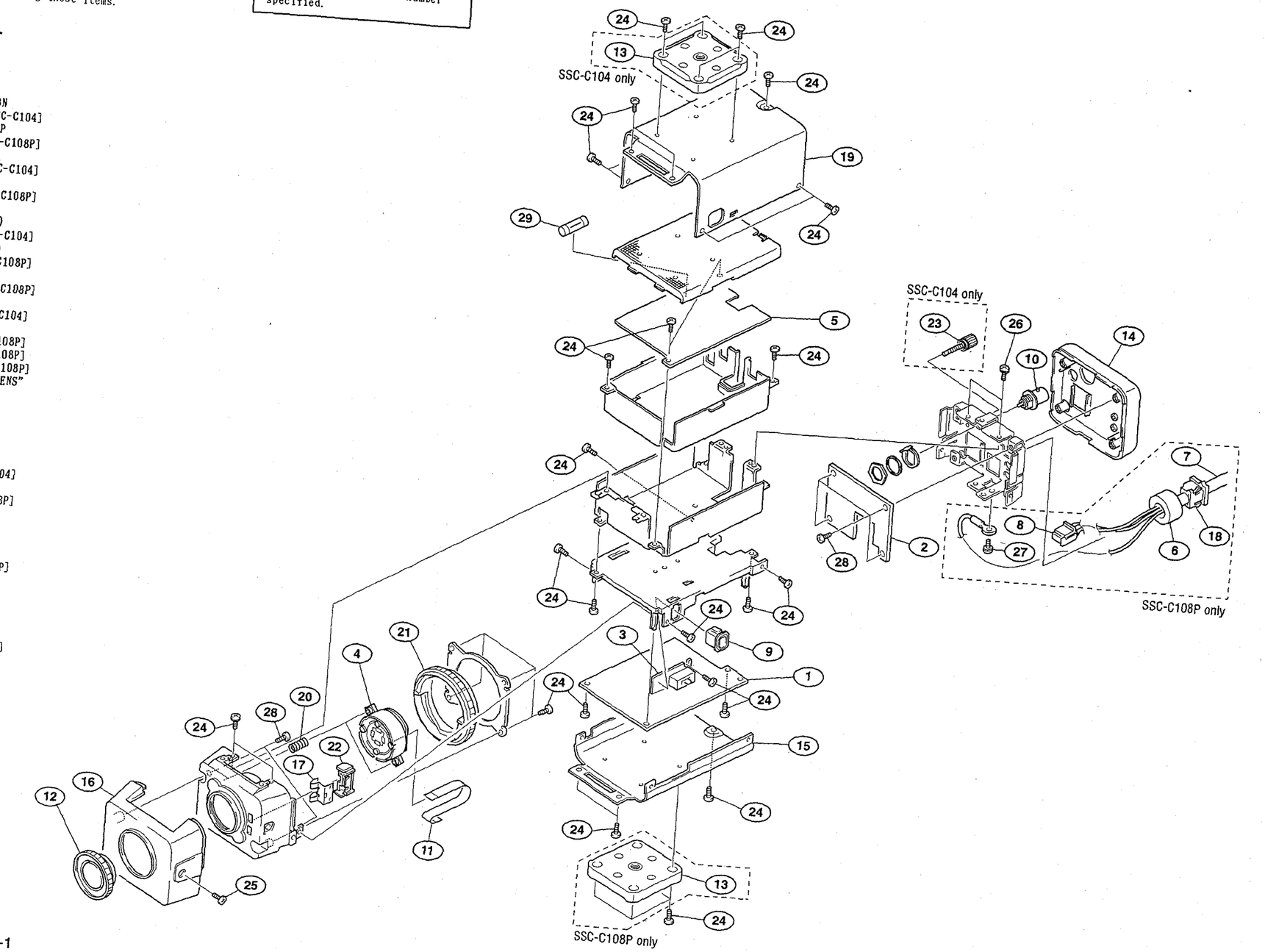
*[NOTE]*

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- All resistors are in ohms.
- Items marked "o" in the SP column are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ⚠ are critical for safety. Replace only with part number specified.

## 6-1. EXPLODED VIEW AND PARTS LIST

| No. | Part No. | SP | Description |
|---|---|---|---|
| 1 | A-8273-004-A | o | MOUNTED CIRCUIT BOARD, MB-653N [for SSC-C104] |
| | A-8273-018-A | o | MOUNTED CIRCUIT BOARD, MB-653P [for SSC-C108P] |
| 2 | A-8273-012-A | o | MOUNTED CIRCUIT BOARD, CT-168 [for SSC-C104] |
| | A-8273-027-A | o | MOUNTED CIRCUIT BOARD, CT-169 [for SSC-C108P] |
| 3 | A-8273-014-A | o | MOUNTED CIRCUIT BOARD, IR-17 |
| 4 | A-8273-640-A | s | FILTER BLOCK ASSY (FOR SERVICE) [for SSC-C104] |
| | A-8273-641-A | s | FILTER BLOCK ASSY (FOR SERVICE) [for SSC-C108P] |
| 5 | A-8273-023-A | o | MOUNTED CIRCUIT BOARD, AC-172 (Included VCA-6 Board) [for SSC-C108P] |
| | 1-473-607-11 | s | CONVERTER UNIT, AC-DC [for SSC-C104] |
| 6 | 1-239-231-11 | s | FILTER, DATA LINE [for SSC-C108P] |
| 7 | ⚠1-551-044-91 | s | CORD, POWER (3 CORE) [for SSC-C108P] |
| 8 | 1-562-211-11 | o | HOUSING, CONNECTOR 3P [for SSC-C108P] |
| 9 | 1-580-172-11 | s | CONNECTOR, MICRO 4P, FEMALE "LENS" |
| 10 | 1-580-724-11 | s | CONNECTOR, BNC "VIDEO OUT" |
| 11 | 1-777-087-11 | o | CABLE, FLEXIBLE FLAT (13 CORE) |
| 12 | 2-042-385-00 | s | CAP, C MOUNT |
| 13 | 3-183-833-01 | s | ADAPTOR |
| 14 | 3-601-824-01 | o | CASE, REAR (FOR AC24V) [for SSC-C104] |
| | 3-601-837-01 | o | CASE, REAR (FOR AC230V) [for SSC-C108P] |
| 15 | 3-601-827-01 | o | CASE, LOWER |
| 16 | 3-601-834-01 | o | PANEL, FRONT |
| 17 | 3-601-836-01 | o | SPRING, LOCK BASE |
| 18 | ⚠3-601-838-01 | s | STOPPER, CODE [for SSC-C108P] |
| 19 | 3-601-883-01 | o | CASE, UPPER |
| 20 | 3-603-263-01 | o | SPRING, COMPRESSION |
| 21 | 3-679-549-02 | o | RING, ADJUST |
| 22 | 3-679-555-01 | o | LOCKBASE, RING |
| 23 | 3-706-165-00 | s | SCREW [for SSC-C104] |
| 24 | 7-621-772-10 | s | SCREW +B 2X4 |
| 25 | 7-627-553-68 | s | SCREW, PRECISION +P 2X6 TYPE3 |
| 26 | 7-628-253-90 | s | SCREW +PS 2.6X4 |
| 27 | 7-682-660-09 | s | SCREW +PS 4X8 [for SSC-C108P] |
| 28 | 7-685-534-19 | s | SCREW +BTP 2.6X8 TYPE2 N-S |
| 29 | ⚠1-532-613-99 | s | FUSE, TIME-LAG 0.2A 250V [for SSC-C108P] |
| | ⚠1-532-737-11 | s | FUSE, GLASS TUBE 0.5A 125V [for SSC-C104] |



## 6-2. ELECTRICAL PARTS LIST

AC-172 BOARD [for SSC-C108P]

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8273-023-A | o | MOUNTED CIRCUIT BOARD, AC-172 (Included VCA-6 Board) |
| 1pc | 4-386-536-01 | s | SHEET, SILICON |
| 1pc | 7-621-772-20 | s | SCREW +B 2X5 |
| C401 | 1-136-212-12 | s | FILM 0.1uF 20% 250V |
| C402 | 1-113-903-11 | s | CERAMIC 0.001uF 20% 250V |
| C403 | 1-113-903-11 | s | CERAMIC 0.001uF 20% 250V |
| C404 | 1-113-925-51 | s | CERAMIC 0.01uF 20% 250V |
| C405 | 1-107-908-11 | s | ELECT 33uF 20% 50V |
| C406 | 1-163-133-00 | s | CERAMIC, CHIP 470PF 5% 50V |
| C407 | 1-164-004-11 | s | CERAMIC, CHIP 0.1uF 10% 25V |
| C408 | 1-128-181-11 | s | ELECT 10uF 20% 400V |
| C409 | 1-128-181-11 | s | ELECT 10uF 20% 400V |
| C410 | 1-163-809-11 | s | CERAMIC, CHIP 0.047uF 10% 25V |
| C411 | 1-163-019-00 | s | CERAMIC, CHIP 0.0068uF 10% 50V |
| C412 | 1-136-207-11 | s | FILM 0.047uF 5% 630V |
| C413 | 1-164-232-11 | s | CERAMIC, CHIP 0.01uF 10% 50V |
| C420 | 1-164-004-11 | s | CERAMIC, CHIP 0.1uF 10% 25V |
| C421 | 1-104-652-11 | s | ELECT 470uF 20% 10V |
| C422 | 1-164-004-11 | s | CERAMIC, CHIP 0.1uF 10% 25V |
| C423 | 1-126-168-11 | s | ELECT 1000uF 25% 6.3V |
| C424 | 1-104-851-11 | s | TANTALUM, CHIP 10uF 20% 10V |
| C425 | 1-104-851-11 | s | TANTALUM, CHIP 10uF 20% 10V |
| CN401 | 1-564-321-00 | s | CONNECTOR 2P, MALE |
| CN403 | 1-955-795-11 | o | HARNESS, SUB (MB-AC) |
| D401 | 8-719-046-69 | s | DIODE DBB08G |
| D402 | 8-719-037-45 | s | DIODE RD22SB-T1 |
| D403 | 8-719-302-98 | s | DIODE RG4C |
| D404 | 8-719-510-30 | s | DIODE D2FL20 |
| D405 | 8-719-404-46 | s | DIODE MA110 |
| D406 | 8-719-510-11 | s | DIODE D1FS4 |
| F401 | ⚠1-532-613-99 | s | FUSE, TIME-LAG 0.2A 250V |
| FH401 | 1-533-189-11 | s | HOLDER, FUSE |
| FH402 | 1-533-189-11 | s | HOLDER, FUSE |
| IC401 | 8-759-355-56 | s | IC FA5304AS |
| L401 | 1-412-531-71 | s | INDUCTOR 33UH |
| LF401 | 1-409-586-11 | s | COIL, LINE FILTER |
| LF402 | 1-409-586-11 | s | COIL, LINE FILTER |
| PH401 | 8-749-925-12 | s | PHOTO COUPLER TLP732-D4-GR-LF2 |
| PH402 | 8-749-925-12 | s | PHOTO COUPLER TLP732-D4-GR-LF2 |
| Q401 | 8-729-034-77 | s | TRANSISTOR 2SK903-M |
| R401 | 1-215-913-11 | s | METAL 220 5% 3W |
| R405 | 1-220-332-91 | s | METAL, CHIP 100K 5% 1/2W |
| R406 | 1-220-332-91 | s | METAL, CHIP 100K 5% 1/2W |
| R407 | 1-220-332-91 | s | METAL, CHIP 100K 5% 1/2W |
| R408 | 1-215-927-00 | s | METAL 47K 5% 3W |
| R409 | 1-216-017-00 | s | METAL, CHIP 47 5% 1/10W |
| R410 | 1-216-009-00 | s | METAL, CHIP 22 5% 1/10W |
| R411 | 1-216-031-00 | s | METAL, CHIP 180 5% 1/10W |
| R412 | 1-218-231-11 | s | METAL, CHIP 1 10% 1/2W |
| R413 | 1-218-231-11 | s | METAL, CHIP 1 10% 1/2W |
| R414 | 1-218-626-11 | s | METAL 100 5% 1W |
| R415 | 1-220-332-91 | s | METAL, CHIP 100K 5% 1/2W |

(AC-172 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R416 | 1-220-332-91 | s | METAL, CHIP 100K 5% 1/2W |
| R417 | 1-220-332-91 | s | METAL, CHIP 100K 5% 1/2W |
| R420 | 1-216-073-00 | s | METAL, CHIP 10K 5% 1/10W |
| R421 | 1-216-295-00 | s | METAL, CHIP 0-OHM |
| T401 | ⚠1-429-560-11 | s | TRANSFORMER, SWITCHING |
| VDR401 | 1-810-271-21 | s | VARISTOR ZNR-14DK471U |

CT-168 BOARD

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8273-012-A | o | MOUNTED CIRCUIT BOARD, CT-168 [for SSC-C104] |
| 1pc | A-8273-027-A | o | MOUNTED CIRCUIT BOARD, CT-169 [for SSC-C108P] |
| C1 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C2 | 1-165-379-11 | s | CERAMIC 0.0022uF 10% 500 [for SSC-C104] |
| C3 | 1-165-379-11 | s | CERAMIC 0.0022uF 10% 500 [for SSC-C104] |
| CN1 | 1-955-794-11 | o | HARNESS, SUB (MB-CT) |
| D1 | 8-719-977-03 | s | DIODE DTZ5.6B |
| D2 | 8-719-977-03 | s | DIODE DTZ5.6B |
| R1 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| RV1 | 1-230-528-11 | s | RES, ADJ, METAL 220K |
| RV2 | 1-230-526-11 | s | RES, ADJ, METAL 47K |
| SW1 | 1-570-598-11 | s | SWITCH, DIP 4-CKT |
| TB1 | 1-537-768-11 | s | TERMINAL BOARD 2P [for SSC-C104] |
| W1 | 1-953-079-13 | o | HARNESS, SUB (CONNECTOR ASSY 2P) [for SSC-C104] |

IR-17 BOARD

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8273-014-A | o | MOUNTED CIRCUIT BOARD, IR-17 |
| C1 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C2 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C3 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C4 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| CN1 | 1-955-793-11 | o | HARNESS, SUB (MB-IR) |
| CN2 | 1-580-172-11 | s | CONNECTOR, MICRO 4P, FEMALE |
| FB1 | 1-414-656-11 | s | INDUCTOR 0uH |
| FB2 | 1-414-656-11 | s | INDUCTOR 0uH |
| FB3 | 1-414-656-11 | s | INDUCTOR 0uH |
| FB4 | 1-414-656-11 | s | INDUCTOR 0uH |
| FB5 | 1-414-656-11 | s | INDUCTOR 0uH |
| FB6 | 1-414-656-11 | s | INDUCTOR 0uH |
| FB7 | 1-414-656-11 | s | INDUCTOR 0uH |
| FB8 | 1-414-656-11 | s | INDUCTOR 0uH |
| SW1 | 1-762-667-11 | s | SWITCH, SLIDE |

MB-653 BOARD

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | A-8273-004-A | o | MOUNTED CIRCUIT BOARD, MB-653N [for SSC-C104] |
| 1pc | A-8273-018-A | o | MOUNTED CIRCUIT BOARD, MB-653P [for SSC-C108P] |
| C201 | 1-135-155-21 | s | TANTALUM, CHIP 4.7uF 10% 16V |
| C202 | 1-135-155-21 | s | TANTALUM, CHIP 4.7uF 10% 16V |
| C203 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C204 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C205 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C206 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C207 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C208 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C209 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C210 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C211 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C212 | 1-126-603-11 | s | ELECT 4.7uF 20% 35V |
| C213 | 1-135-162-21 | s | TANTALUM, CHIP 33uF 10% 6.3V |
| C214 | 1-135-216-11 | s | TANTALUM 10uF 20% 10V |
| C215 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C216 | 1-135-181-21 | s | TANTALUM, CHIP 4.7uF 10% 6.3V |
| C217 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C218 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C219 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C220 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C221 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C222 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C223 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C224 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C225 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C226 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C227 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C228 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C229 | 1-162-919-11 | s | CERAMIC, CHIP 22PF 5% 50V |
| C230 | 1-135-216-11 | s | TANTALUM 10uF 20% 10V |
| C231 | 1-135-162-21 | s | TANTALUM, CHIP 33uF 10% 6.3V |
| C232 | 1-135-216-11 | s | TANTALUM 10uF 20% 10V |
| C233 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C234 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C235 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C301 | 1-164-156-11 | s | CERAMIC 0.1uF 25V |
| C302 | 1-135-155-21 | s | TANTALUM, CHIP 4.7uF 10% 16V |
| C303 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C304 | 1-104-917-11 | s | TANTALUM 15uF 20% 20V |
| C305 | 1-107-823-11 | s | CERAMIC 0.47uF 10% 16V |
| C306 | 1-135-076-21 | s | TANTALUM, CHIP 1uF 10% 35V |
| C307 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C308 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C309 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C310 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C311 | 1-162-921-11 | s | CERAMIC, CHIP 33PF 5% 50V |
| C312 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C313 | 1-135-217-21 | s | TANTALUM 15uF 20% 6.3V |
| C314 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C315 | 1-110-569-11 | s | TANTALUM 47uF 20% 6.3V |
| C316 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C317 | 1-162-919-11 | s | CERAMIC, CHIP 22PF 5% 50V |
| C318 | 1-162-915-11 | s | CERAMIC, CHIP 10PF 5PF 50V |
| C319 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C320 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |

(MB-653 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| C321 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C323 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C324 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C325 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C326 | 1-162-964-11 | s | CERAMIC 0.001uF 10% 50V |
| C327 | 1-162-919-11 | s | CERAMIC, CHIP 22PF 5% 50V |
| C328 | 1-162-958-11 | s | CERAMIC 270PF 5% 50V |
| C329 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C330 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C331 | 1-162-964-11 | s | CERAMIC 0.001uF 10% 50V |
| C332 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C333 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C334 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C335 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C336 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C337 | 1-135-181-21 | s | TANTALUM, CHIP 4.7uF 10% 6.3V |
| C338 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C339 | 1-162-912-11 | s | CERAMIC 7PF 0.5PF 50V |
| C340 | 1-162-920-11 | s | CERAMIC, CHIP 27PF 5% 50V [for SSC-C104] |
| C340 | 1-162-921-11 | s | CERAMIC, CHIP 33PF 5% 50V [for SSC-C108P] |
| C341 | 1-162-912-11 | s | CERAMIC 7PF 0.5PF 50V |
| C342 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C343 | 1-104-851-11 | s | TANTALUM, CHIP 10uF 20% 10V |
| C344 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C345 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C346 | 1-162-921-11 | s | CERAMIC, CHIP 33PF 5% 50V |
| C347 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C348 | 1-162-927-11 | s | CERAMIC, CHIP 100PF 5% 50V |
| C401 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C402 | 1-110-569-11 | s | TANTALUM 47uF 20% 6.3V |
| C403 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V |
| C404 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C405 | 1-164-227-11 | s | CERAMIC 0.022uF 10% 25V |
| C406 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C407 | 1-104-752-11 | s | TANTALUM 33uF 20% 6.3V |
| C408 | 1-104-752-11 | s | TANTALUM 33uF 20% 6.3V |
| C409 | 1-104-752-11 | s | TANTALUM 33uF 20% 6.3V |
| C410 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C411 | 1-164-346-11 | s | CERAMIC 1uF 16V |
| C412 | 1-164-346-11 | s | CERAMIC 1uF 16V |
| C413 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C414 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C415 | 1-162-920-11 | s | CERAMIC, CHIP 27PF 5% 50V |
| C416 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C417 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C418 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C419 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C420 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C421 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C422 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C423 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C424 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C425 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C426 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C427 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C428 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C429 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |

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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| C430 | 1-128-392-11 | s | ELECT 470uF 20% 6.3V |
| C431 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C432 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C433 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C434 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C435 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C436 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C437 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C438 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C439 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C440 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C441 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C442 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C443 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C444 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C445 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C446 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C501 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C502 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C503 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C504 | 1-135-217-21 | s | TANTALUM 15uF 20% 6.3V |
| C505 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C506 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C507 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C508 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C509 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C510 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C511 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C512 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C513 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C514 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C601 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C602 | 1-126-603-11 | s | ELECT 4.7uF 20% 35V |
| C603 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C604 | 1-128-595-11 | s | ELECT, NONPOLAR 2.2uF 20% 50V |
| C605 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C606 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C607 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C608 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C701 | 1-135-181-21 | s | TANTALUM, CHIP 4.7uF 10% 6.3V |
| C702 | 1-110-501-11 | s | CERAMIC 0.33uF 10% 16V |
| C704 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C705 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C706 | 1-135-216-11 | s | TANTALUM 10uF 20% 10V |
| C801 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C802 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C803 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C804 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C805 | 1-135-180-21 | s | TANTALUM, CHIP 3.3uF 20% 6.3V |
| C806 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C807 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C808 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C809 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C810 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C811 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C812 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C813 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C814 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| C815 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |

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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| C816 | 1-135-180-21 | s | TANTALUM, CHIP 3.3uF 20% 6.3V |
| C817 | 1-107-685-11 | s | TANTALUM 15uF 20% 6.3V |
| C818 | 1-162-964-11 | s | CERAMIC 0.001uF 10% 50V |
| C819 | 1-164-378-11 | s | CERAMIC 30PF 5% 50V [for SSC-C104] |
| C819 | 1-162-975-11 | s | CERAMIC 24PF 5% 50V [for SSC-C108P] |
| C820 | 1-162-921-11 | s | CERAMIC, CHIP 33PF 5% 50V [for SSC-C104] |
| C820 | 1-162-975-11 | s | CERAMIC 24PF 5% 50V [for SSC-C108P] |
| C821 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C822 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C823 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C824 | 1-128-357-11 | s | ELECT, NONPOLAR 10uF 20% 16V |
| C825 | 1-135-217-21 | s | TANTALUM 15uF 20% 6.3V |
| C826 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C827 | 1-162-920-11 | s | CERAMIC, CHIP 27PF 5% 50V [for SSC-C104] |
| C827 | 1-162-917-11 | s | CERAMIC, CHIP 15PF 5% 50V [for SSC-C108P] |
| C828 | 1-113-990-91 | s | TANTALUM 15uF 20% 16V |
| C829 | 1-113-985-11 | s | TANTALUM 10uF 20% 20V |
| C833 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C834 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C901 | 1-135-091-91 | s | TANTALUM, CHIP 1uF 20% 16V |
| C902 | 1-126-392-11 | s | ELECT, CHIP 100uF 20% 6.3V |
| C903 | 1-162-918-11 | s | CERAMIC, CHIP 18PF 5% 50V |
| C904 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C905 | 1-111-253-11 | s | TANTALUM 100uF 20% 6.3V |
| CN201 | 1-573-921-11 | s | CONNECTOR, FFC/FPC (ZIF) 12P |
| CN202 | 1-580-756-21 | o | PIN, CONNECTOR 7P |
| CN203 | 1-580-789-21 | s | PIN, CONNECTOR (SMD) 6P |
| CN204 | 1-760-388-11 | s | CONNECTOR, SMD 9P, MALE |
| CN205 | 1-580-789-21 | s | PIN, CONNECTOR (SMD) 6P |
| CT301 | 1-141-311-11 | s | CAR, TRIMMER 20PF |
| D201 | 8-719-421-27 | s | DIODE MA728 |
| D202 | 8-719-404-46 | s | DIODE MA110 |
| D203 | 8-719-404-46 | s | DIODE MA110 |
| D301 | 8-719-404-35 | s | DIODE MA141WK |
| D302 | 8-719-404-46 | s | DIODE MA110 |
| D303 | 8-719-404-46 | s | DIODE MA110 |
| D304 | 8-719-002-81 | s | DIODE 1T363 |
| D601 | 8-719-404-46 | s | DIODE MA110 |
| D701 | 8-719-404-46 | s | DIODE MA110 |
| FL401 | 1-236-923-11 | s | FILTER, LOW PASS |
| FL402 | 1-415-779-21 | s | DELAY LINE, LC [for SSC-C104] |
| FL402 | 1-415-781-21 | s | DELAY LINE, LC [for SSC-C108P] |
| FL801 | 1-415-778-21 | s | DELAY LINE, LC |
| FL802 | 1-415-780-21 | s | DELAY LINE, LC |
| IC201 | 8-752-054-61 | s | IC CXA1390AR |
| IC202 | 8-759-234-77 | s | IC TC4S66F |
| IC203 | 8-759-234-77 | s | IC TC4S66F |
| IC204 | 8-759-510-71 | s | IC BA10358F-E2 |
| IC205 | 8-759-062-66 | s | IC TC7S66F |
| IC301 | 8-752-372-14 | s | IC CXD1267AN |
| IC302 | 8-752-374-87 | s | IC CXD2401R-T4 |
| IC303 | 8-752-326-08 | s | IC CXD1159Q |
| IC304 | 8-759-031-84 | s | IC SC7S04F |
| IC401 | 8-759-100-95 | s | IC UPC324G2 |

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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| IC402 | 8-759-711-50 | s | IC NJU7022M |
| IC403 | 8-752-038-97 | s | IC CXA1391R |
| IC501 | 8-752-351-02 | s | IC CXL1518N |
| IC601 | 8-759-250-81 | s | IC TC5081AP |
| IC602 | 8-759-232-50 | s | IC TC74HC132AF |
| IC702 | 8-759-510-71 | s | IC BA10358F-E2 |
| IC801 | 8-752-056-59 | s | IC CXA1592R |
| IC802 | 8-759-243-19 | s | IC TC7SU04F |
| IC901 | 8-759-262-03 | s | IC MC14577CF |
| IC902 | 8-759-035-93 | s | IC SC7S32F |
| L201 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L301 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L302 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L303 | 1-410-373-31 | s | INDUCTOR CHIP 2.2uH |
| L304 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L401 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L501 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L601 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L701 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L801 | 1-410-392-11 | s | INDUCTOR CHIP 82uH |
| L802 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L803 | 1-412-033-11 | s | INDUCTOR CHIP 220uH |
| L804 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| L805 | 1-412-033-11 | s | INDUCTOR CHIP 220uH |
| L901 | 1-412-030-11 | s | INDUCTOR CHIP 22uH |
| Q201 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q202 | 8-729-402-81 | s | TRANSISTOR XN4501 |
| Q204 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q205 | 8-729-402-84 | s | TRANSISTOR XN4601 |
| Q206 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q207 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q208 | 8-729-026-51 | s | TRANSISTOR 2SA1576A-T106-Q |
| Q209 | 8-729-026-51 | s | TRANSISTOR 2SA1576A-T106-Q |
| Q301 | 8-729-403-42 | s | TRANSISTOR XN1401 |
| Q302 | 8-729-026-51 | s | TRANSISTOR 2SA1576A-T106-Q |
| Q401 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q402 | 8-729-026-51 | s | TRANSISTOR 2SA1576A-T106-Q |
| Q403 | 8-729-402-13 | s | TRANSISTOR XN1501 |
| Q404 | 8-729-403-42 | s | TRANSISTOR XN1401 |
| Q405 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q406 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q407 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q408 | 8-729-402-81 | s | TRANSISTOR XN4501 |
| Q409 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q410 | 8-729-026-51 | s | TRANSISTOR 2SA1576A-T106-Q |
| Q501 | 8-729-403-27 | s | TRANSISTOR XN4401 |
| Q701 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| Q702 | 8-729-026-51 | s | TRANSISTOR 2SA1576A-T106-Q |
| Q801 | 8-729-026-51 | s | TRANSISTOR 2SA1576A-T106-Q |
| Q802 | 8-729-402-13 | s | TRANSISTOR XN1501 |
| Q803 | 8-729-026-51 | s | TRANSISTOR 2SA1576A-T106-Q |
| Q901 | 8-729-907-00 | s | TRANSISTOR DTC114EU |
| Q902 | 8-729-120-28 | s | TRANSISTOR 2SC1623-L5L6 |
| R201 | 1-216-813-11 | s | METAL, CHIP 220 5% 1/16W |
| R202 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R203 | 1-216-835-11 | s | METAL, CHIP 15K 5% 1/16W |
| R204 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R205 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W [for SSC-C104] |

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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R205 | 1-216-832-11 | s | METAL, CHIP 8.2K 5% 1/16W [for SSC-C108P] |
| R206 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R207 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R208 | 1-216-853-11 | s | METAL, CHIP 470K 5% 1/16W |
| R209 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R210 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R211 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R212 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R213 | 1-216-849-11 | s | METAL, CHIP 220K 5% 1/16W |
| R214 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R215 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R216 | 1-216-828-11 | s | METAL, CHIP 3.9K 5% 1/16W |
| R217 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R218 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R219 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R220 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R221 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R222 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R223 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R224 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R225 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R226 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R227 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R228 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R229 | 1-216-823-11 | s | METAL, CHIP 1.5K 5% 1/16W |
| R230 | 1-216-824-11 | s | METAL, CHIP 1.8K 5% 1/16W |
| R231 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R232 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R233 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R234 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R235 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R236 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R237 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R238 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R239 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R240 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R241 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R242 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R243 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R244 | 1-216-853-11 | s | METAL, CHIP 470K 5% 1/16W |
| R245 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R246 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R247 | 1-216-846-11 | s | METAL, CHIP 120K 5% 1/16W |
| R248 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R249 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R250 | 1-216-849-11 | s | METAL, CHIP 220K 5% 1/16W |
| R251 | 1-216-846-11 | s | METAL, CHIP 120K 5% 1/16W |
| R252 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R253 | 1-216-835-11 | s | METAL, CHIP 15K 5% 1/16W |
| R254 | 1-216-853-11 | s | METAL, CHIP 470K 5% 1/16W |
| R255 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R256 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R257 | 1-216-823-11 | s | METAL, CHIP 1.5K 5% 1/16W |
| R258 | 1-216-853-11 | s | METAL, CHIP 470K 5% 1/16W |
| R259 | 1-216-824-11 | s | METAL, CHIP 1.8K 5% 1/16W |
| R260 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R301 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R302 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |

(MB-653 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R303 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R304 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R305 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R306 | 1-216-813-11 | s | METAL, CHIP 220 5% 1/16W |
| R307 | 1-216-813-11 | s | METAL, CHIP 220 5% 1/16W |
| R308 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R309 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R310 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R311 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R312 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R313 | 1-216-815-11 | s | METAL, CHIP 330 5% 1/16W |
| R314 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R315 | 1-216-864-11 | s | METAL, CHIP 0-OHM [for SSC-C108P] |
| R316 | 1-220-158-91 | s | METAL, CHIP 3.6K 5% 1/16W |
| R317 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R320 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R321 | 1-216-824-11 | s | METAL, CHIP 1.8K 5% 1/16W |
| R324 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R325 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R326 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R328 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R329 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R330 | 1-216-864-11 | s | METAL, CHIP 0-OHM [for SSC-C104] |
| R330 | 1-162-923-11 | s | CERAMIC, CHIP 47PF 5% 50V [for SSC-C108P] |
| R331 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W [for SSC-C108P] |
| R332 | 1-216-864-11 | s | METAL, CHIP 0-OHM [for SSC-C104] |
| R333 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R334 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W [for SSC-C108P] |
| R335 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R337 | 1-216-813-11 | s | METAL, CHIP 220 5% 1/16W |
| R338 | 1-216-817-11 | s | METAL, CHIP 470 5% 1/16W |
| R401 | 1-216-835-11 | s | METAL, CHIP 15K 5% 1/16W |
| R402 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R403 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R404 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R405 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W |
| R406 | 1-216-835-11 | s | METAL, CHIP 15K 5% 1/16W |
| R407 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R408 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R409 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W |
| R410 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R411 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R412 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R413 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R414 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R415 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R416 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R417 | 1-216-823-11 | s | METAL, CHIP 1.5K 5% 1/16W |
| R418 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R419 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R420 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R421 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R422 | 1-216-822-11 | s | METAL, CHIP 1.2K 5% 1/16W |
| R423 | 1-216-822-11 | s | METAL, CHIP 1.2K 5% 1/16W |
| R424 | 1-216-822-11 | s | METAL, CHIP 1.2K 5% 1/16W |
| R425 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |

(MB-653 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R426 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R427 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R428 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R429 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R430 | 1-216-827-11 | s | METAL, CHIP 3.3K 5% 1/16W |
| R431 | 1-216-827-11 | s | METAL, CHIP 3.3K 5% 1/16W |
| R432 | 1-216-827-11 | s | METAL, CHIP 3.3K 5% 1/16W |
| R433 | 1-216-831-11 | s | METAL, CHIP 6.8K 5% 1/16W |
| R434 | 1-216-831-11 | s | METAL, CHIP 6.8K 5% 1/16W |
| R435 | 1-216-831-11 | s | METAL, CHIP 6.8K 5% 1/16W |
| R436 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R437 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R438 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R439 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R440 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R441 | 1-216-823-11 | s | METAL, CHIP 1.5K 5% 1/16W |
| R442 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R443 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R444 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R445 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R446 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R447 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R448 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R449 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R450 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R451 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R452 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R453 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R454 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R455 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R456 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R457 | 1-216-838-11 | s | METAL, CHIP 27K 5% 1/16W |
| R458 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W [for SSC-C104] |
| R458 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W [for SSC-C108P] |
| R459 | 1-216-835-11 | s | METAL, CHIP 15K 5% 1/16W |
| R460 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R461 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R462 | 1-216-832-11 | s | METAL, CHIP 8.2K 5% 1/16W |
| R463 | 1-216-834-11 | s | METAL, CHIP 12K 5% 1/16W |
| R464 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R465 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R501 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R502 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R601 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R602 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R603 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R604 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R605 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R606 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R607 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R608 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W |
| R701 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R702 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W |
| R703 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R704 | 1-216-822-11 | s | METAL, CHIP 1.2K 5% 1/16W |
| R705 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R707 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |

(MB-653 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R708 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W |
| R709 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R710 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R711 | 1-216-805-11 | s | METAL, CHIP 47 5% 1/16W |
| R712 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R713 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R714 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R715 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R716 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R717 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R718 | 1-216-817-11 | s | METAL, CHIP 470 5% 1/16W |
| R801 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R802 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R803 | 1-216-823-11 | s | METAL, CHIP 1.5K 5% 1/16W |
| R804 | 1-216-838-11 | s | METAL, CHIP 27K 5% 1/16W |
| R805 | 1-216-836-11 | s | METAL, CHIP 18K 5% 1/16W |
| R806 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R807 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R808 | 1-216-830-11 | s | METAL, CHIP 5.6K 5% 1/16W |
| R809 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R810 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R811 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R812 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R813 | 1-216-834-11 | s | METAL, CHIP 12K 5% 1/16W |
| R814 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R815 | 1-216-833-11 | s | METAL, CHIP 10K 5% 1/16W |
| R816 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R817 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R818 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R819 | 1-216-830-11 | s | METAL, CHIP 5.6K 5% 1/16W |
| R820 | 1-216-857-11 | s | METAL, CHIP 1M 5% 1/16W |
| R821 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W [for SSC-C108P] |
| R822 | 1-216-864-11 | s | METAL, CHIP 0-OHM [for SSC-C104] |
| R823 | 1-216-846-11 | s | METAL, CHIP 120K 5% 1/16W |
| R824 | 1-216-816-11 | s | METAL, CHIP 390 5% 1/16W |
| R825 | 1-216-828-11 | s | METAL, CHIP 3.9K 5% 1/16W |
| R826 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R827 | 1-216-846-11 | s | METAL, CHIP 120K 5% 1/16W |
| R828 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R829 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R830 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R901 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R902 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R903 | 1-216-822-11 | s | METAL, CHIP 1.2K 5% 1/16W |
| R904 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R905 | 1-216-806-11 | s | METAL, CHIP 56 5% 1/16W |
| R906 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R907 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| RV201 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV202 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV301 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV302 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV401 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV402 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV403 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV404 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV405 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV406 | 1-238-858-11 | s | RES, ADJ, METAL 47K |

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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| RV407 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV408 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV801 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| RV802 | 1-238-858-11 | s | RES, ADJ, METAL 47K |
| X801 | 1-579-994-12 | s | VIBRATOR, CERAMIC 14.31818MHz [for SSC-C104] |
| X801 | 1-579-995-12 | s | VIBRATOR, CERAMIC 17.734475MHz [for SSC-C108P] |

VCA-6 BOARD [for SSC-C108P]

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| C501 | 1-107-826-11 | s | CERAMIC 0.1uF 10% 16V |
| C503 | 1-164-489-11 | s | CERAMIC 0.22uF 10% 16V |
| C504 | 1-126-391-11 | s | ELECT, CHIP 47uF 20% 6.3V |
| C505 | 1-164-227-11 | s | CERAMIC 0.022uF 10% 25V |
| C506 | 1-115-156-11 | s | CERAMIC 1uF 10V |
| C507 | 1-135-181-21 | s | TANTALUM, CHIP 4.7uF 10% 6.3V |
| C508 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C509 | 1-162-970-11 | s | CERAMIC, CHIP 0.01uF 10% 25V |
| C510 | 1-135-181-21 | s | TANTALUM, CHIP 4.7uF 10% 6.3V |
| C511 | 1-162-957-11 | s | CERAMIC 220PF 5% 50V |
| C512 | 1-126-394-11 | s | ELECT, CHIP 10uF 20% 16V |
| C513 | 1-104-851-11 | s | TANTALUM, CHIP 10uF 20% 10V |
| C514 | 1-126-391-11 | s | ELECT, CHIP 47uF 20% 6.3V |
| C515 | 1-164-392-11 | s | CERAMIC 390PF 5% 50V |
| C516 | 1-107-839-11 | s | ELECT, CHIP 6.8uF 20% 16V |
| C517 | 1-126-395-11 | s | ELECT, CHIP 22uF 20% 16V |
| C518 | 1-162-928-11 | s | CERAMIC 120PF 5% 50V |
| C519 | 1-164-506-11 | s | CERAMIC, CHIP 4.7uF 16V |
| C520 | 1-107-839-11 | s | ELECT, CHIP 6.8uF 20% 16V |
| C521 | 1-126-396-11 | s | ELECT, CHIP 47uF 20% 16V |
| C522 | 1-126-397-11 | s | ELECT, CHIP 33uF 20% 25V |
| CN501 | 1-566-095-11 | o | PIN, BOARD TO BOARD 5P |
| D502 | 8-719-987-69 | s | DIODE DAN217 |
| D503 | 8-719-510-11 | s | DIODE D1FS4 |
| D504 | 8-719-027-77 | s | DIODE MA796 |
| IC501 | 8-759-035-90 | s | IC SC7S02F |
| IC502 | 8-759-031-84 | s | IC SC7S04F |
| IC503 | 8-759-260-57 | s | IC TL1451ACPW-E05 |
| IC504 | 8-759-710-88 | s | IC NJM431U |
| L501 | 1-412-029-11 | s | INDUCTOR CHIP 10uH |
| L502 | 1-424-674-11 | s | COIL, CHOKE 22UH |
| L503 | 1-412-033-11 | s | INDUCTOR CHIP 220uH |
| L504 | 1-412-033-11 | s | INDUCTOR CHIP 220uH |
| L505 | 1-412-028-11 | s | INDUCTOR CHIP 4.7UH |
| Q501 | 8-729-907-00 | s | TRANSISTOR DTC114EU |
| Q502 | 8-729-028-73 | s | TRANSISTOR DTA114EUA-T106 |
| Q503 | 8-729-029-14 | s | TRANSISTOR DTC144EUA-T106 |
| Q504 | 8-729-216-22 | s | TRANSISTOR 2SA1162 |
| Q505 | 8-729-024-91 | s | TRANSISTOR 2SC2712-GL-TE85L |
| Q506 | 8-729-145-18 | s | TRANSISTOR 2SC3736-OK |
| Q507 | 8-729-804-41 | s | TRANSISTOR 2SB1122-S |
| Q508 | 8-729-024-91 | s | TRANSISTOR 2SC2712-GL-TE85L |
| R501 | 1-216-813-11 | s | METAL, CHIP 220 5% 1/16W |
| R502 | 1-216-851-11 | s | METAL, CHIP 330K 5% 1/16W |
| R503 | 1-216-818-11 | s | METAL, CHIP 560 5% 1/16W |
| R504 | 1-216-819-11 | s | METAL, CHIP 680 5% 1/16W |
| R505 | 1-216-841-11 | s | METAL, CHIP 47K 5% 1/16W |
| R506 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R507 | 1-216-846-11 | s | METAL, CHIP 120K 5% 1/16W |
| R508 | 1-216-859-11 | s | METAL, CHIP 1.5M 5% 1/16W |
| R509 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R511 | 1-216-813-11 | s | METAL, CHIP 220 5% 1/16W |
| R512 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R513 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R514 | 1-216-840-11 | s | METAL, CHIP 39K 5% 1/16W |
| R515 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R517 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |

(VCA-6 BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R518 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R519 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R520 | 1-218-733-11 | s | METAL 51K 0.50% 1/16W |
| R521 | 1-216-845-11 | s | METAL, CHIP 100K 5% 1/16W |
| R522 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R523 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R524 | 1-218-864-11 | s | METAL, CHIP 5.1K 0.50% 1/16W |
| R525 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R526 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R527 | 1-216-842-11 | s | METAL, CHIP 56K 5% 1/16W |
| R528 | 1-216-834-11 | s | METAL, CHIP 12K 5% 1/16W |
| R529 | 1-216-823-11 | s | METAL, CHIP 1.5K 5% 1/16W |
| R530 | 1-216-821-11 | s | METAL, CHIP 1K 5% 1/16W |
| R531 | 1-216-829-11 | s | METAL, CHIP 4.7K 5% 1/16W |
| R532 | 1-216-817-11 | s | METAL, CHIP 470 5% 1/16W |
| R533 | 1-216-818-11 | s | METAL, CHIP 560 5% 1/16W |
| R534 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R535 | 1-216-825-11 | s | METAL, CHIP 2.2K 5% 1/16W |
| R536 | 1-216-864-11 | s | METAL, CHIP 0-OHM |
| R537 | 1-216-837-11 | s | METAL, CHIP 22K 5% 1/16W |
| R538 | 1-216-839-11 | s | METAL, CHIP 33K 5% 1/16W |
| R539 | 1-216-819-11 | s | METAL, CHIP 680 5% 1/16W |
| RV501 | 1-238-852-11 | s | RES, ADJ, METAL 470 |
| T501 | 1-450-976-11 | s | TRANSFORMER, CONVERTER |

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FRAME
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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | 1-239-231-11 | s | FILTER, DATA LINE [for SSC-C108P] |
| 1pc | 1-473-607-11 | s | CONVERTER UNIT, AC-DC [for SSC-C104] |
| 1pc | ⚠1-532-737-11 | s | FUSE, GLASS TUBE 0.5A 125V [for SSC-C104] |
| 1pc | ⚠1-551-044-91 | s | CORD, POWER (3 CORE) [for SSC-C108P] |
| 1pc | 1-562-211-11 | o | HOUSING 3P [for SSC-C108P] |
| 1pc | 1-580-172-11 | s | CONNECTOR, MICRO 4P, FEMALE "LENS" |
| 1pc | 1-580-724-11 | s | CONNECTOR, BNC "VIDEO OUT" |
| 1pc | 1-777-087-11 | o | CABLE, FLEXIBLE FLAT (13 CORE) |

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PACKING MATERIALS & SUPPLIED ACCESSORIES
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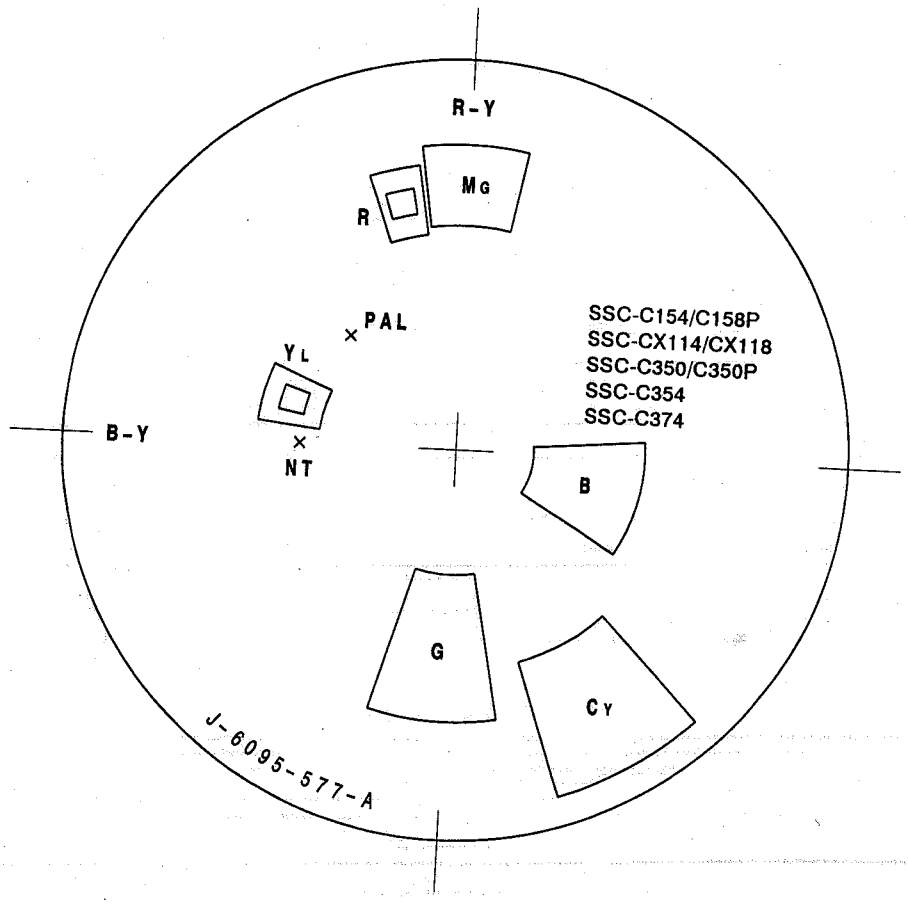
| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | 1-580-173-11 | s | CONNECTOR, MICRO 4P, MALE |
| 1pc | 3-601-839-01 | o | CUSHION |
| 1pc | 3-601-845-01 | o | INDIVIDUAL CARTON [for SSC-C108P] |
| 1pc | 3-601-847-01 | o | INDIVIDUAL CARTON [for SSC-C104] |
| 1pc | ⚠3-810-845-11 | s | MANUAL, INSTRUCTION |
| 1pc | 3-810-845-21 | s | MANUAL, INSTRUCTION [for SSC-C108P] |


R-Y
MG
R
PAL
YL
NT
B-Y
SSC-C154/C158P
SSC-CX114/CX118
SSC-C350/C350P
SSC-C354
SSC-C374
B
G
CY
J-6095-577-A

J-6095-577-A